



THE  
HANDBOOK OF NYASALAND.

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(Second Edition).

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24 NOV. 1941

MERENSKY-BIBLIOTEEK

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NYASALAND PROTECTORATE




SCALE 1:014 inches = 48 Miles

MILES 0 10 20 30 40 50 60 70 80 90 100

REFERENCE

- International Boundary
- Inter-Colonial Boundary
- District Boundary
- Roads
- Railway
- Telegraph
- Telegraph Stations
- Administrative Stations
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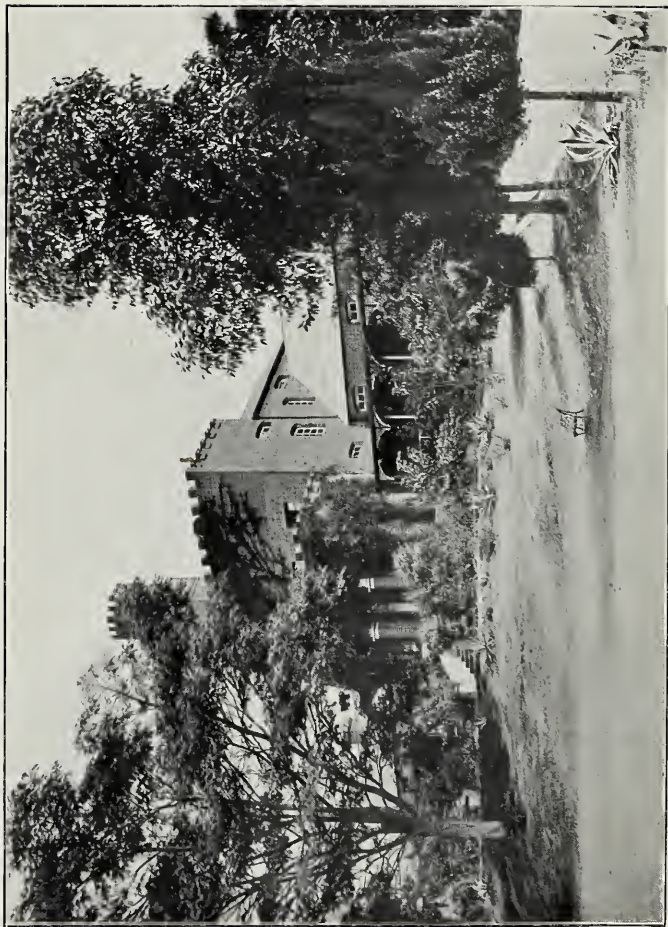


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# **The Handbook of Nyasaland,**

**comprising**

**Historical, Statistical and General Information  
concerning the Nyasaland Protectorate.**

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**SECOND EDITION  
(1910).**

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**Compiled from Official and other reliable sources.\***

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\* This Handbook, though in part compiled from Official records, is not an official publication.



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or to any Agent of the Company.

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## Addenda.

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1. Area of Protectorate, by latest Surveys is 39,801 sq. miles.
7. Area West Nyasa District 2,609 sq. miles.
  - „ Mombera „ 4,293 „ „ „
  - „ Cent. Angoniland „ 5,884 „ „ „
104. „ Cent. Angoniland „ 5,884 „ „ „
131. Delete 9th November and substitute 3rd June, Birthday of His Majesty the King.
132. 1909-10 Revenue £76,647. Expenditure £108,728.
138. Road and River Duties and Registration Fees remitted on goods in transit to North Eastern Rhodesia.
142. (6). Trading Licences:—
 

	£	s.	d.
Licence to engage in General Trading	25	0	0
Licence for each additional store after the first	2	0	0
Licence to engage in Retail Trading	5	0	0
Licence for each additional store after the first	2	0	0
143. (15) Hawker's Licence ... .. 2 0 0
143. (10) Auctioneer's Licence... .. 5 0 0
 

Special Licence to Auctioneer to sell liquor by auction, per diem ... .. 0 2 6
161. Trade of Protectorate 1909-10:—
 

Imports:—£127,742.	Exports:—£131,225.
--------------------	--------------------

		lbs.	value.
181.	Cotton exported 1909-10:—	858,926	£26,209.
187.	Tobacco „ „	1,084,757	27,120.
191.	Coffee „ „	748,410	15,574.
194.	Chillies „ „	119,126	1,986.
195.	Tea „ „	36,281	907.
200.	Ground-nuts „ „	760,043	4,750.
200.	Rubber „ „	28,848	4,538.
	Maize „ „	40,007 cwts.	4,012.

225. Labour. The recruitment and employment of labour is governed by "The Employment of Natives Ordinance, 1909."

ZOMBA,

September, 1910.

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## GENERAL DESCRIPTION.

### BOUNDARIES.

The territory comprised in the Nyasaland Protectorate is a strip about 520 miles in length, and varying from 50 to 100 in width, lying approximately between latitude S.  $9^{\circ} 45'$  and  $17^{\circ} 15'$ , and longitude E.  $33^{\circ}$  and  $36^{\circ}$ , and having an area of 43,608 square miles. The most southerly portion of the Protectorate is about 130 miles from the sea as the crow flies.

This strip falls naturally into two divisions, (1) consisting of the western shore of Lake Nyasa, with the high tablelands separating it from the basin of the Loangwa river, and (2) the region lying between the watershed of the Zambesi and Shire on the *west*, and the Lakes Chiuta and Chilwa and the River Ruo, an affluent of the Shire, on the *east*, including the mountain systems of the Shire Highlands and Mlanje, and a small portion, also mountainous, of the south-eastern coast of Lake Nyasa.

The Protectorate has for boundaries :—

On the East — Lake Nyasa (on the eastern shore of which lie German East Africa and Portuguese East Africa.)

On the South — Portuguese Zambezia.

On the West — North Eastern Rhodesia (under the British South Africa Company's jurisdiction).

On the North — German East Africa.

The limits of the Protectorate were laid down in a Proclamation dated 14th May, 1891, and the respective spheres of influence of Great Britain, Germany and Portugal were defined in an agreement with Germany in July, 1890, and in a treaty with Portugal in June, 1891.

The administrative area includes a Concession at Chinde, leased from the Portuguese Government, on which merchandise for British territory is transhipped free of all Portuguese duties.

### MOUNTAINS.

A very large proportion of the Protectorate is of a mountainous or hilly nature, which generally takes the form of lofty plateaux, rising more or less abruptly from the lower ground.

The principal ranges are as follows :—

1. *Mlanje*.—This is a magnificent mass, situated in the extreme south-east of the Protectorate between Lake Chilwa and the River Ruo. It consists of a great tableland, with an area of about 200 square miles, and an altitude, for the most part, of upwards of 6,000 feet. From this tableland rise several granite peaks, bare of vegetation, and probably of volcanic origin, the highest of which is 9,843 feet. The twin peaks at the south end are named Harris Peaks.

2. *Shire Highlands*.—An irregular chain of mountainous country on the east of the Shire river above its confluence with the Ruu. This chain has a length from north to south of about 90 miles, and a width of 20 to 30; the highest portion is found in Mount Zomba, lying at the northern end, midway between Lake Chilwa and the Shire. Mount Zomba, like Mlanje, is a plateau, with an average altitude of 4,000 feet, and rising at its highest point to 7,000 feet. Chiradzulu, 5,300 feet is another prominent peak in this range, and is situated about 30 miles south of Mount Zomba.

3. *The Kirk Range*.—A high plateau on the west of the Shire, and approaching the south-western end of Lake Nyasa. It attains its greatest altitude, about 7,000 feet, in Mounts Dedza and Chongoni at its northern end.

4. *The Angoniland Plateau*.—West of Nyasa, is another lofty tableland, the highest peaks of which range between 5,000 and 6,000 feet.

5. *The Nyika Plateau*.—At the north-western end of the lake, much of which exceeds 7,000 feet, the highest point rising to over 8,000 feet.

6. *The Nkonde Mountains*.—On the north-western edge of the Protectorate, a small but important group, ranging between 6,000 and 7,000 feet.

7. *Mangoche Mountain*.—4,700 feet, between Nyasa and Lake Chiuta. It is the southern extremity of the watershed of the Ruvuma, on the east side of Nyasa.

The *Yomalema Mountains* (Mount Rungwe, 10,000 feet), and the Livingstone range forming the northern watershed of Nyasa, are in German territory.

## LAKES.

*Nyasa*.—Lake Nyasa, the third largest lake in Africa, is a deep basin 360 miles long and 15 to 50 wide, lying at an altitude of 1,645 feet above the sea and closely approached, especially on the northern and eastern sides, by lofty mountains and tablelands which rise several thousand feet above it. Its greatest depth is 386 fathoms at longitude E.  $34^{\circ} 19'$ , latitude S.  $11^{\circ} 11' 30''$ .

Its principal affluents, the Songwe, Rukuru, Bua and Lintipi are on the western coast, but are of no great size. It finds an outlet at its southern extremity in the River Shire, by which its waters are carried to the Zambesi, and ultimately to the Indian Ocean.

Islands are few and of small area. The best known are those of the Likoma group about midway up the lake, which are the head-quarters of the Universities Mission.

The level of the lake varies somewhat in proportion to the annual rainfall; in an exceptionally dry season it has fallen over six feet.

The water is fresh and drinkable.

Navigation is everywhere practicable, but owing to the existence of sand bars most of the harbours can only be entered by

vessels of light draught. During the dry season the lake is liable to severe south-easterly gales, which cause a heavy sea.

Lake Nyasa possesses few good harbours. The anchorages of the various ports are, in most cases, much exposed to the north or south winds, which sweep the lake from end to end, and often cause a troublesome sea. The approaches are hampered by sand-banks and bars formed at the river mouths. The island of Likoma possesses a fair anchorage.

Fort Johnston, the principal port and the head-quarters of the Protectorate's Marine Transport Department, is at the outlet of the lake. Other ports are, on the west coast, Monkey Bay, Domira Bay, Kota-Kota, Bandawe, Nkata Bay, Florence Bay, Deep Bay and Karonga. Of these Kota-Kota and Karonga are the most important, the former being the trade port for North-Eastern Rhodesia, and the latter for the Stevenson route to Lake Tanganyika; both are customs stations and stations of the Trans-Continental Telegraph Line.

On the east coast are Langenburg and Wiedhafen, both German settlements; Mtengula, where there is an excellent harbour, in Portuguese territory, and Fort Maguire and Makan-danji in South Nyasa district.

*Chilwa*.—Lake Chilwa, or *Shirwa*, south-east of Nyasa on the Portuguese border, receives the drainage of the eastern slopes of the Shire Highlands and the northern slopes of Mlanje. It contracts to a large degree in the dry season and does not exceed much more than 100 square miles in the height of the rainy season. The water is brackish, and very shallow.

*Chiuta*.—Lake Chiuta, a few miles north of Chilwa and also on the Portuguese boundary, is about 30 miles long, and 2 to 8 miles wide. The water is fresh, and it forms the source of the River Lujenda, which flows northward from it. This lake, in the dry season, is greatly reduced in area.

*Malombe*.—Lake Malombe, through which the Shire flows soon after issuing from Nyasa, had, some years ago, a considerable area, but is now partially filled in by the formation of a reedy and sandy island and is little more than a broad channel of the river.

## RIVERS.

The *Shire*.—The only important river in the Protectorate is the Shire, which issues from the south end of Lake Nyasa, and, passing through the reedy swamps of Lake Malombe, takes a southerly course as far as the Murchison Falls, 80 miles below the lake. Here it is deflected for a time by the western portion of the Shire Highlands, which it skirts for the next 64 miles in a series of falls and rapids, rendering navigation impossible. Below the rapids it takes a south-easterly direction as far as its junction with the Ruo 60 miles lower down, whence it once more flows southward for about 90 miles to its meeting with the Zambesi, 110 miles from the sea. The total course of the Shire is about 295 miles, the last 50 of which are in Portuguese territory.

Navigation on the Upper Shire is dependent a good deal upon the rainfall for the year and the consequent depth of water in the river and on the bar at the mouth of the lake. Under favourable conditions small steamers can proceed from the lake as far as Matope, some 10 miles above the Murchison Falls.

The Lower Shire is navigable in the rainy season as far as Katunga at the foot of the rapids, 28 miles by road from Blantyre. In the dry season, however, the river steamers cannot, as a rule, proceed higher than Port Herald, about 98 miles lower down. Between Katunga and Matope no boats can pass.

Other rivers are as follows :—

*Ruo*.—The Ruo, the principal affluent of the Shire, rises on Mount Mlanje and joins the Shire at Chiromo. For about the last 80 miles of its course it forms the south-eastern boundary of the Protectorate. There are some fine falls at a point about 25 miles above Chiromo, where it is joined by the Lifuluni. The Ruo is navigable for canoes for about 12 miles above Chiromo.

*Lintipi, Rukuru, Songwe*.—The Lintipi, Bua, South Rukuru and North Rukuru, and Songwe, western feeders of Nyasa, take their rise in the mountain region west of the lake, each having a course of upwards of 100 miles. They all have a considerable volume of water in the wet season, but are navigable only for canoes. The Songwe forms a portion of the northern boundary of the Protectorate.

---



## DIVISIONS.

For administrative purposes the Protectorate is divided into 13 Districts, viz:—

DISTRICTS.	HEAD-QUARTERS.
1. North Nyasa.	Karonga.
2. West Nyasa.	Chintechi.
3. Mombera.	Mzimba.
4. Marimba.	Kota-Kota.
sub-District Ngara	Ngara.
5. Angoniland.	Lilongwe.
sub-District Dedza.	Dedza.
"      "      Dowa.	Dowa.
6. South Nyasa.	Fort Johnston
7. Upper Shire.	Ncheu.
sub-District Liwonde.	Liwonde.
8. Zomba.	Zomba.
sub-District Chikala.	Chikala.
9. West Shire.	Neno.
10. Blantyre.	Blantyre.
11. Mlanje.	Fort Anderson.
12. Ruu.	Chiromo.
13. Lower Shire.	Port Herald.

### 1. North Nyasa.

This is the most northerly district of the Protectorate; it is bounded on the north by German territory, on the west by North Eastern Rhodesia, on the south by the Mombera and West Nyasa districts, and on the east by lake Nyasa. It is very mountainous, with the exception of a strip of low-lying ground running along the Lake shore about 10 miles wide at the northern extremity at Songwe, and gradually diminishing at Florence Bay, about 50 miles down the coast line, where the mountain come down almost to the water's edge. There is a small plateau in the central-southern portion of the district called the Nyika plateau; also at Fort Hill, in the north-west, there is a stretch of flat country about 20 miles long by 8 miles broad; some of the rivers, North Rukuru, South Rukuru and Hewi, partly run through narrow valleys, some three or four miles wide, which are more or less flat; with these exceptions the whole district is comprised of mountains, many over 7,000 and nine over 8,000 feet high.

The district is well watered everywhere with the exception of a comparatively small area in the east central portion; the principal rivers being the Songwe, Lufira, North Rukuru, Vua, South Rukuru, Rumpi and Runyina; none of these, however, being navigable.

There are two large swamps, one in the west, close to Deep Bay, and the other, the Vwaza, in the south-west corner of the district, which are impassable towards the end of the rains, but are ordinarily traversable.

The country is well wooded, especially among the Misuku hills in the north, where there are some very good timber trees, notably *mbawa* and *mwenya*.

Steamer fuel is obtainable at several places close to the lake shore, the principal wooding stations being Florence Bay, Deep Bay and Vua.

The average annual rainfall at Karonga is about 55 inches; the temperature very seldom rises above 95° in the hottest weather, but the heat is very trying owing to its excessive humidity; the midday temperature in the coldest months averages 75°, but the climate on the hills is most enjoyable.

Before the advent of the European this district was continually harried by the Angoni raiding, capturing slaves and cattle, and driving the inhabitants into hiding in caves in the most inaccessible parts of the mountains. The Arabs also established a slaving centre close to Karonga, but were finally broken up in 1889 by the expedition against the notorious Mlozi, whose stockade was captured and destroyed.

The principal tribes in the district are the Ankonde, Achenga, including the Akamanga, Afulirwa, and Ahewi; Anyanja, and Anyika, including the Amambwi, Alabwia, and Asukwa; there are also a few Awemba, Atawa, Aswahili, Atonga, and the Achikunda.

The principal food crops are maize, mapira, mlezi, sweet potatoes, cassava, yams, several kinds of beans, rice on the lake shore, and peas in the Misuku hills.

With the exception of the Aswahili, who profess Mohammedanism, the natives are without religion, but superstitious; the Livingstonia Mission is, however, making great progress in teaching, having many schools in all parts of the district.

All the good garden land on the plains is now under native cultivation, but there is still a little good land, well watered, in the hills, suitable for native settlement, which is not yet taken up.

The natives experience great difficulty in finding European employment as local requirements for labour are small.

A native market has been started at Karonga.

The Government station is at Karonga; formerly there were also Government stations at Deep Bay and Fort Hill, but these have been abandoned owing to the settlement of the district and the absence of traffic on the Nyasa-Tanganyika route.

The Livingstonia Mission has a large station at Kondowe, 10 miles from Florence Bay, known as the Overtoun Institution, where natives are taught skilled work of all sorts, and where



education is largely carried on; they also have another European station at Karonga, and numerous district schools.

Game is plentiful in almost all parts of the district; elephants, at certain times of the year, roam in the southern portion; a few also cross the Songwe from German territory during the rains; there are several rhinoceros in the southern portion; a few buffalo are to be found round Mwanda hill; eland, sable, roan, kudu, hartebeeste, waterbuck, mpala, puku, zebra, reedbuck, bushbuck, duiker, warthog and wild pig are common in certain localities; there are many hippopotami and crocodiles along the lake shore, and lions and leopards infest the Songwe.

The principal trading concern is the African Lakes Corporation, which has an European store at Karonga, and a native store at Mlowa; there are also two other European stores which trade with natives.

A road runs parallel to the lake from Karonga to the German boundary at Songwe, 19 miles long; also a road from Karonga, through Deep Bay to Florence Bay, 52 miles; from Florence Bay to Kondowe, 10 miles; from Kondowe to Mzimba in a south-westerly direction, 20 miles completed: the Stevenson road runs from Karonga to the north-west boundary, 62 miles. These roads are suitable for bicycles and rickshas during the dry season, with the exception of some 10 miles of the Stevenson road which is very hilly and stony.

The usual method of transport is by carrier, but the Livingstonia Mission runs wagons between Florence Bay and Kondowe.

## 2. West Nyasa.

The West Nyasa district lies between longitude  $33^{\circ} 40'$  and  $34^{\circ} 20'$  east, latitude  $10^{\circ} 43'$  and  $12^{\circ} 30'$  south; it is bounded on the north by the Rukuru river and North Nyasa district, on the east by Lake Nyasa, on the south by the Dwangwa river and Marimba district, on the west by the Vipya Mountains, which separate it from Mombera district.

The district consists of a strip of wild broken country, falling from the plateau of the Mombera district to Lake Nyasa, about 125 miles long, and from 5 to 40 miles broad, with over 150 miles of coast line and a total area of 4,086 square miles. With the exception of a small strip along the lake, the district is mountainous, with several peaks over 6,000 ft. above sea level, viz., Kwandama, Cheoli, Kaningina, Mto'ama, and Usumara; all these peaks are connected by high grass land, useless for grazing purposes, however, owing to the grass being sour.

Hot springs are found at Chisi in the south, and the Limpasa valley and mountains in the vicinity in the north. The district being narrow and broken contains no navigable rivers, the most

important being the Luweya, which with its various affluents drains considerably more than half the district; the remaining portion is drained by the numerous small streams falling direct from the hills.

Timber is abundant for building and domestic purposes. A large number of canoes are annually made by the natives from the larger trees.

The average rainfall for the past 7 years is 65 inches, and droughts are uncommon; drinking water is abundant and good.

The only important tribe in West Nyasa is the Atonga; in the south a few Achewa remain, and in the northern portion a few Ahenga; these two tribes are quite unimportant and under Atonga headmen.

In 1881 the Livingstonia Mission made their head-quarters at Bandawe and in 1897 a Resident Magistrate was placed at Nkata. The Atonga have supplied a large contingent to the local armed forces, and latterly two companies of the 1st and two companies of the 2nd Battalion King's African Rifles have been recruited from Tongaland and have performed meritorious service in West Africa and Somaliland. The population, which is a floating one, averages 33,000 and is about 8 to the square mile.

The staple food of the Atonga is cassava, supplemented by fish, in the catching of which they are very expert; during recent years they have gone in extensively for cattle breeding, purchasing largely from the Angoni. Owing to the district being heavily forested, pasturage is scarce, and cattle only do well on the lake shore, where they derive their sustenance largely from the matete reed.

The majority of the Atonga are now Christianized and receive a fair education from the numerous Scotch mission schools scattered through the district; they are an intelligent but truculent race, and difficult of management. Large numbers proceed south annually in search of work.

There are three European stations in West Nyasa, viz., Chintechi, the headquarters of the Resident and Government Offices; Bandawe, the district station of the Livingstonia Mission (Free Church of Scotland) and a trading store of the African Lakes Corporation; and at Chombe, the head-quarters of the staff of the African Lakes Corporation's rubber estate.

Rice is now extensively planted in the southern portion of the district and the acreage under cultivation is annually increasing. Rubber cultivation is being taken in hand, and the prospect of this remunerative product doing well is very encouraging.

Zebra, hartebeeste, waterbuck and some of the smaller game are plentiful on the northern and southern boundaries, eland and buffalo being frequently met with throughout the district. Blue

buck, and the red duiker, believed to be peculiar to this district, are plentiful.

There are no roads, but a fair number of native tracks are found crossing the more accessible passes to Mombera district. Travelling from end to end of West Nyasa is made along the lake shore or by boat.

### 3. Mombera.

The Mombera district is bounded on the north by the North Nyasa district; on the east by the West Nyasa district; on the south by the Marimba district, and on the west by North-Eastern Rhodesia. It is divided from the West Nyasa district by the Vipya mountains (highest peaks about 7,000 ft. above sea level). The country generally is undulating and covered with small trees and is about 4,000 feet above sea level, except south of the Chimoliro hills to the Dwangwa river, which varies from 1,600 to 3,500 feet above sea level. Here and there are isolated hills, the most prominent of which is Hora, which rises to a height of about 1,200 feet above the plateau and is situated 17 miles north of Mzimba, the head-quarters of the district.

The two principal rivers are the Rukuru and its tributary the Kasitu, the former of which rises at Mount Perekezi on the western side of the Vipya mountains: thence it flows in a southerly direction, and making a large bend eventually flows north and north-east through a gorge into Lake Nyasa. This river, above its confluence with the Runyina, dries up in the cold season, with the exception of some pools, but water can be obtained in most parts by digging a foot or two into the sand of the river bed. Below Mount Jakwa there is a good flow of water supplied from the Runyina and Rumpi rivers, which rise at the south end of the Nyika plateau, and have a strong flow of clear water the whole year. The Rukuru valley appears at one time to have been a lake as it is very sandy and shells can be found there. The Kasitu river rises at Mount Wozi on the western slopes of the Vipya mountains, and, flowing in a northerly direction, joins the Rukuru about a mile below Mount Jakwa. This river flows all the year, although there is not much water in the dry season. The only other streams that do not dry up in the dry season, north of the Chimoliro hills, are the Lunyangwa, which flows into the Kasita near Mount Bungannia, and the Mzimba, which joins the Rukuru, west of Mount Sorora. South of the Chimoliro hills there is a good supply of water in the eastern portion, the best of which is the Lupachi stream, which rises at Ngombe Chinda, the south-eastern corner of the Vipya mountains, and flows, with a fall of about 2,000 feet, into the Dwangwa river seven miles from Lake Nyasa. A tributary of the Lupachi, the Pwazi, also has a constant flow of water and runs in a deep valley north of Mpalapala hill. Besides these there is the Liverezi, west of the Lupachi, which has a fair supply of water all

the year. West of the Liverezi there is no water to be found in the dry season, except in a few shallow wells.

The only swamp worth mentioning is on the Rukuru north of Kaharai hill, which is visited at times by elephants, and contains a large number of duck and other waterfowl.

The best timber is found in the Rukuru valley. The forests of small trees with which the district is covered—with the exception of the north-eastern part, where trees are scarce—are practically useless, except for firewood.

The rainfall at Mzimba is between 30 and 35 inches annually, but varies in different parts of the district, the Rukuru valley and the valleys near the Vipya mountains having a larger fall. The rains, as a rule, begin towards the end of November and continue until April. There is usually a fortnight's drought in January. In the dry season water is very scarce, the people in many cases having to walk some miles from their villages to obtain any. The water is then obtained from holes dug in the sandy river beds.

Owing to the raiding of the Angoni in former years the population of the district consists of—besides the Angoni—Wahenga, Awemba, Akamanga, Sukuma, Safwa, Wankonde and Waphoka from the north, Atonga from the east, Senga, Biza and Achewa from the west and south, and finally the Batumbuka, the original inhabitants of the country. The area of the district is 5,859 square miles, and the population in round numbers 108,700 or 18·5 to the square mile. Before the district was actively administered, the people lived in large villages for fear of being raided by their neighbours, but within the last three years have scattered all over the district, building small villages adjacent to patches of fertile soil, which is found chiefly near the banks of the streams.

Crops grown by the natives are maize, beans and millet, also some peas and in rare instances cassava. Owing to a large proportion of the food supply, whether the crops have been abundant or not, being used in the manufacture of native beer, etc., there is usually a scarcity of food in February and March, and it is then difficult to obtain food for carriers, etc.

The only method of cultivation is with the hoe, of which a large number are made in the district, there being a considerable iron deposit in the valley of the Rukuru river.

The only religion of the people is a belief in a Supreme Being and in the spirits of their ancestors. They are intensely superstitious.

The Angoni were formerly very large owners of cattle, but rinderpest some years ago decimated their herds. Since then, however, there has been a steady increase, the number at present being about 22,000 head, and in addition a fair number of sheep and goats.

Besides the Government head-quarters on the Mzimba stream, the Livingstonia Mission has stations at Loudon 19 miles south, and Ekwendeni, about 50 miles north-east of Mzimba.



Formerly this Mission had stations at Njuyu and Hora, but these were abandoned, the native population having moved to more fertile parts of the country. A large number of schools have been established in the district, and it is the exception to find a village without one.

The African Lakes Corporation have built some native stores, and a brisk trade is carried on in soft goods, beads, hoes, etc. The district is quite unsuitable for European cultivation, the soil being generally poor and the cost of transport to the coast prohibitive.

Generally speaking game is very scarce, the Angoni having practically exterminated it in former years. On the Dwangwa river and in the Rukuru valley, however, zebra, eland, hartebeeste, etc., may be found. There are a considerable number of leopards and hyenas, and lions cause a good deal of trouble in certain localities.

There are two roads in the district suitable for cycle and light wagon traffic, viz., the continuation of the Dowa-Ngara main road, which is completed as far as Mount Jakwa, thus linking up Karonga and Zomba; and from Mount Hora to Manda on the western boundary of the district (35 miles in length). These roads are ten feet wide and in the dry season, when the damage caused by the rains has been repaired, are suitable for cycle traffic. In the rains, however, parts are liable to be washed away and overgrown with small bush.

A weekly mail is received from Zomba on Friday and from Chintechi, on Lake Nyasa, on Saturday. An outward mail leaves Mzimba for the above places on Monday morning.

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#### 4. Marimba.

The Marimba district is situated between parallels of south latitude  $12^{\circ} 30'$  and  $13^{\circ} 30'$  and is bounded on the north by the Dwangwa river, on the south by the Chirua and Kasangadzi rivers and African Trans-Continental Telegraph Line, on the east by Lake Nyasa and on the west by the watershed which divides North-Eastern Rhodesia from Nyasaland.

Topographically the district is divided into three divisions, viz. :—

- (a). The Lake Delta.
- (b). The Mountain Range.
- (c). The Kasungu Plain.

(a). The LAKE DELTA extends from Lake Nyasa to the base of the range which runs north and south across the district: it is on an average 10 miles wide, consisting mostly of low swampy ground intersected by many rivers. In the wet season the whole delta is difficult to traverse on account of high grass and unfordable rivers.

(b). The MOUNTAIN RANGE forms a backbone to the district and is an extension northwards of the Kirk range, which continues around the north end of Lake Nyasa. This range of hills is composed of granite with graphitic schistose rocks running through it.

It is along these decomposing schists that the natives cultivate gardens with such good results, as the soil is rich, abundant and very light. The simple decomposing granite country is in all cases avoided by the natives as being too poor to support crops. The principal peaks in this range do not attain to any great height: those worthy of notice are Mounts Nchisi and Chipata, neither of which are more than 6,000 ft. above sea level.

(c). The KASUNGU PLAIN lies immediately to the west of the above hills, and extends westwards to the base of the watershed.

This plain is for the most part covered with deep alluvial soil rich in outcrops of iron ore: a considerable number of hoes are manufactured out of the bog iron which has accumulated in the *dambos*. A few peaks are met with, the most conspicuous being Mount Kasungu, which is about 3,000 ft. above the plain.

These peaks are mostly bare granite covered with lichen, which, when dead and dry, gives the hill tops a white appearance.

The principal rivers flowing through the district are:—the Bua, Kaombe, Dwangwa, Rusa, Lifuliza, Chia and the Chirua. None of these are navigable and all, with the exception of the Chirua river, cease to run during the latter portion of the dry season.

In the vicinity of the Bua and Rusa rivers, and for many miles along their courses through the Kasungu plain, there are extensive *dambos* providing excellent feeding grounds for cattle. The soil is impregnated with salt, quantities of which are obtained by the natives by filtration and evaporation. There are indications that a deposit of salt underlies the alluvial soil in many portions of this plain.

During the wet season the rivers can only be crossed at well known fords.

No portion of Marimba can be called desert, *i.e.*, devoid of trees and vegetation, although there are extensive tracts of country uninhabited. This is principally due to the scarcity of water in the dry season, or to the constant annoyance and loss caused by lions, elephant and buffalo.

There are no good forests, and the hills are sparsely covered with very inferior trees. The lake shore has been denuded of trees by the natives to such an extent that it is impossible to procure a supply of firewood for steam vessels.

The average rainfall is not easy to tabulate as the topographical features are so varied. Thus at Kota-Kota, which is about 20 miles from the base of the hills, 51 inches falls, whilst on the hills it is safe to estimate nearly double that quantity especially near to Mounts Nchisi and Chipata.

The best position for the cultivation of cereals is undoubtedly along the rich, schistose deposits near Mount Nchisi. The best place for farming, cattle ranching, etc., would be on the Kasungu plain in the vicinity of either the Bua or Rusa rivers. Cattle

ranching would be, however, highly speculative at present owing to presence of tsetse fly.

There is not one tribe with a paramount chief. This is due to the situation of Marimba between Mpeseni, Mombera, Jumbe and Chiwere. Each of these chiefs raided Marimba for slaves in the past, with the consequence that there are many units which are being added to by Angoni and Atonga returning, after years of captivity among other tribes, to their old homes in Marimba. Mwasi, the principal chief at Kasungu, is an interloper from the vicinity of the Zambezi who settled down as a slave trader. The lake delta was conquered by the late Jumbes, who styled themselves Sultans and whose only aim was to devastate the neighbouring country by their slave raids, retiring again and again to the fastness of Kota-Kota whenever they met with serious opposition. These disreputable coast men professed to be the rulers of all Marimba, and even bartered away its mineral rights, whereas they never owned land or governed or possessed subjects who resided more than a few miles from Kota-Kota: on the contrary, they dared not visit either the hills or the Kasungu plain. These people have left a form of Mohammedanism which is conspicuous for its idle adherents. The population soon decreased with the above persecution, and thus in an area of 5,400 square miles there is a population of only about 50,000.

The staple food in the lake delta consists of cassava and rice: in the hills and Kasungu plain, of maize, millet and potatoes. All these products are obtained by the usual means of cultivation, viz., the hoe.

Very few of the people possess cattle, except those on the Kasungu plain, but goats and sheep are reared. The people are not of a roving disposition, but prefer to remain on or near to the burial places of their ancestors. A few of the Angoni, however, move about the hills.

So far as religious ideas are concerned they may be summarized thus:—

- (a). A belief in some supreme being, and spirit world.
- (b). That evil reigns but can be propitiated.
- (c). They are fatalists and believe in amulets, the individual cannibalism of Mafiti and in the Wachawe or medicine men.

This applies to all natives whether Achewa, Angoni or Wayao.

An increasing number of the rising generation are being taught by the Universities Mission, the Scotch Free Church and the Dutch Reformed Church. It is too early yet for any real influence to be apparent on the minds of these natives whose ancestors, for many centuries, were savages.

Their employment consists in doing just sufficient work consistent with obtaining the necessities of life, and avoiding all worry and vexation which invariably follows if they seek to amass anything beyond the wants of daily life. They live a natural

life, and accept death without complaint. Their troubles commence as soon as European ideas enter their environment.

There is a market at Kota-Kota where copper coin has been introduced, as the silver was found much too valuable for the majority of people. Fish, mats, firewood, cooking pots, oil, etc., etc., may be purchased daily at small cost.

The district is administered by a Resident with two Assistants. They are assisted by a body of civil police. The head station is at Kota-Kota, where the Resident and an Assistant Magistrate reside. The town contains about 6,000 inhabitants, and is also a customs port at which all vessels call. The Trans-Continental Telegraph Line has a station here.

The sub-district of Ngara is under the immediate care of an Assistant Magistrate, who lives at Ngara, 60 miles west of Kota-Kota on the direct road to Fort Jameson.

There are no prospects for Europeans in search of employment as there are only one or two stores in the district, and no farmers.

Game abounds everywhere but especially along the Bua valley, and elephant, rhinoceros, buffalo, eland, kudu, sable, puku and most other small game are met with.

The main roads consist of:— From Dowa to Mzimba, which passes Ngara station; from Kota-Kota to Fort Jameson, which also passes Ngara. Transport is done entirely by means of native carriers and, with the exception of the Dowa main road, cycles could not be used with either comfort or safety.

The chief export is rice. This could be materially increased coincident with the demand, as the lake delta is eminently suited for its cultivation.

### Ngara Sub-District.

The Ngara Sub-District is a continuation of the Central Angoniland plateau, and includes an area of about 4,000 square miles.

This plateau averages from 3,000 to 3,400 ft. above sea level, and consists almost wholly of undulating to flat country which calls for no special comment.

It is bounded on the east by the Mpelele, Kasangadzi and Mtiti rivers, and the range of hills which divides the plateau from the lake delta, on the north by the Duangwa and Mpasase rivers, on the west by the watershed of the Duangwa, Lingadzi, and Livelezi rivers, and on the south by the telegraph line.

The only rivers of any size are the Bua, which rises close to Fort Manning and flows in an easterly direction till it reaches Lake Nyasa; the Livelezi and Rusa, which rise in the Mchinji mountains and flow into the Bua; the Duangwa, which rises near Ngombe Rume hill, at the extreme north-west corner of the district, and which flows almost due east into Lake Nyasa; and the Lingadzi, which rises on the western boundary and flows north-east into the Duangwa river. None of these rivers are



navigable; the Livelezi flows all the year round, the others during the dry months simply become a series of large pools, while in the smaller rivers and *dambos* it is necessary to dig for water.

The district, with the exception of the Kasungu plain, is well wooded—that is, with the usual small timber peculiar to Nyasaland; timber for furniture is scarce, the only wood suitable for this purpose being the *Mlombwa*, which is found near the Duangwa river, and in the south-east portion of the district.

The average annual rainfall is 30 inches, and is badly distributed, rain falling only during four months in the year; consequently the district would only appear to be suitable for quick growing crops such as rice, cotton and tobacco, which can be grown with success in various parts.

Cattle do well, more especially in the immediate vicinity of Kasungu, which is probably due to the large amount of salt in the soil in that locality.

English vegetables of all kinds flourish, while wheat in small quantities has been grown with success on the Kasangadzi river and at Kasungu.

There are 59 miles of main road through the district. This road is a continuation of the Dowa Trunk road and commences at the Kasangadzi river near Zeole's village, and runs in a north-westerly direction to the northern boundary on the Mpasase river, where it enters the Mombera district. It is suitable throughout for either a bicycle or ricksha, and is free from tsetse fly. The camping places, when travelling by machilla, are as follows:—

## MILES.

Zeole's village to Ngara Boma ...	24	Through gentle undulating country.
Ngara to Kasungu Mission Station ...	15	Through flat country.
Kasungu Mission to Duangwa River ...	16	Through gentle undulating country.

The only "district" road is that from Kota-Kota to Fort Jameson, which runs for a distance of 85 miles through the district, and which joins the Kota-Kota section at Ngoma's village some 34 miles west of Kota-Kota. This road is free from tsetse fly to the west of Ngoma's, but it is very plentiful the east of that village.

The stages by machilla are as follows:—

## MILES.

Ngoma's village to Ngara ...	24	Through undulating flat country.
Ngara to Santi's village (on the Bua River).	18	Through flat country.
Santi's to Manchichi's ...	23	Through gently undulating country.
Manchichi's to Dutch Mission Station	20	Through undulating to hilly country.
Dutch Mission Station to Fort Jameson	11	(N.E.R. Territory.)

Game, including elephant and rhinoceros, is plentiful, more especially on the Bua, Rusa, and Lingadzi rivers, gnu and mpallah antelope being the only species not to be met with.

The total native population of the district is 30,000, and consists chiefly of Achewa and Achipeta. These people, branches of the Anyanja tribe, under chief Karonga, originally came from near where the village of Kachindamoto's is now situated in the Dedza sub-District, and are reported to have entered the Kasungu district about 100 years ago. The Achipeta, who take their name from the country in which they reside, which is covered with the chipeta grass, entered the district from the south-east, chiefs Kanyenda and Zeole settling on the Kasangadzi river. The Achewa, under Mwase, trekked west-north-west through Central Angoniland to the Mchinji mountains, from whence they crossed into the Malambo country, North-Eastern Rhodesia, ultimately entering the district from the north and west.

For many years they seem to have been unmolested, but about 1830 Zongandaba, the Ngoni, on his journey north from Zumbo, striking rather more to the east, reached the confluence of the Lundazi and Rukuru rivers (Mombera district). He is reported to have stayed there for three years, during which time the Achewa were greatly persecuted, many being slain, while practically all their cattle were looted.

On Zongandaba's departure north they again enjoyed comparative peace, but on his death (about 1870) the Angoni under Mombera returned south and settled in what is now known as the Mombera district, from whence raiding parties were constantly sent to Kasungu to persecute the Achewa till the British took Mwase's country in 1897.

The late Dr. Livingstone passed through the Kasungu country in 1863, and a few natives are still alive who remember his coming. The only trade carried on by these people was in ivory and slaves. Elephants, being plentiful, were greatly hunted, the ivory being sent in caravans to Zanzibar and Quelimane, while slaves were sold by many of the chiefs to the Arab trader Jumbe, who was settled for many years at Kota-Kota, and who carried on a regular trade from the Loangwa river to the coast.

The only method of agriculture was with a hoe usually made of wood and large crops of maize and millet were annually planted. In spite of the country being rich in iron, no smelting appears to have been done, the people relying on their neighbours, the Atumbuka, from whom they purchased spears and arrows. These were the principal weapons used in warfare, and were often made from the Mpangala thorn; poison was only used by the Achipeta, who used the gall of the crocodile.

The people believe in a Supreme Being named "Mulungu," but their ideas are vague in the extreme. They worship the spirits of the dead, more especially their dead uncle and grandmother, and it is through these spirits that they ask whatever favour they may require of "Mulungu."

If anything unpleasant occurs to the living it is attributed to the spirit of some dead person which is angry, and which must be appeased by some sacrifice. So strong is their belief in the power of the spirits, that should a man suffer in life from the act of another and be unable to procure satisfaction, he will kill himself, so that his spirit may be able to harass the living. Physically weak, these people have not been popular as workers, but contact with Europeans has improved them, and large numbers at the present time go annually to work in the mines in Southern Rhodesia.

The number of cattle in the district is about 600. Sheep are comparatively scarce; goats are numerous, each village possessing a fair number. Average prices:—

Cattle	£2 to £3	per head.
Sheep	4/- to 5/-	„
Goats	2/- to 3/-	„

Each village grows considerably more maize than is sufficient for its own needs. A fair quantity is sold at Fort Jameson and elsewhere, the surplus being converted into native beer, of which there is generally a good supply. The crops are stored in the *nkokwes*, common to all districts of this Protectorate. Milk is generally difficult to obtain; fowls and eggs are plentiful.

The Achewa of the Kasungu district are the only natives who possess sufficient stamina and intellect to be of any use as labourers. But they, in common with the Chipeta, are extremely averse to undertaking any fixed labour at the low prices ruling in this country, although they are generally willing to take on *tenga tenga* work (porters) for short periods. The highly paid work of the gold-fields, south of the Zambezi, is an attraction to the Kasungu Achewa. A certain number of chiefs and headmen—Mwasi and Chiloa among the Achewa, Nambemba and Santi among the Achipeta, being the most noticeable—have still a fair amount of influence with their people, but the growing feeling of personal security tends to split up the large village into numbers of small communities, each in charge of an elder native, who calls himself *mfumu* (chief), but who has absolutely no authority outside his own ring-fence, and often very little inside it. This process, which is apparently inevitable socially and economically, has done more than anything else to impair the real power of the chiefs.

There are no fire-arms in the district with the exception of the few that are allowed for the purposes of defence against lions and for scaring elephants, hippopotami and pigs from the crops.

## 5. Central Angoniland.

The Central Angoniland district is connected with Zomba by the new main trunk road which runs for 88 miles via Liwonde across the Upper Shire district until Fort Mlangeni is reached, whence the road runs through Portuguese territory for a distance of  $25\frac{1}{2}$  miles and recrosses the Anglo-Portuguese boundary  $1\frac{1}{2}$  miles from Dedza, which is the entrance-station to the district. Large and clearly defined hills are the most striking feature in the landscape surrounding Dedza station. On the Portuguese side Mpenya, Domwe and Dzombwe, more like large rocks than hills, rise abruptly from an undulating plain and are situated about 10 miles from and in a parallel line of some 50 miles length with the Anglo-Portuguese boundary.

The boundary between Portuguese territory and Central Angoniland begins from east to west at beacon No. 9, about 10 miles south of Dedza boma, and runs along the watershed for about 8 miles in a north-westerly direction as far as beacon No. 7 (2 miles from Dedza): thence it is continued in a westerly direction for 53 miles to the source of the Diampwe river on the Dzalan-yama range. From Pomve hill the Anglo-Portuguese boundary runs in a north-westerly direction for 50 miles as far as beacon No. 1 the point of junction of the three territories of Nyasaland, Portuguese territory and North-Eastern Rhodesia. From beacon No. 1 the boundary of the district and North-Eastern Rhodesia continues in a north-westerly direction for 47 miles as far as the Mchinji mountains. From this point the telegraph line forms the boundary line running east and west between Central Angoniland and Marimba for nearly 60 miles; here the boundary follows the Mtiti stream to its junction with the Kasangadzi river, which it follows to its source; thence it follows the Chirua river down stream in an easterly direction for nearly 40 miles as far as the mouth of the river at Lake Nyasa. From this point the lake shore forms the south-eastern boundary of Central Angoniland for a distance of 74 miles until the mouth of the Livelezi river. The left bank of this river forms the south-western boundary between Central Angoniland and the South Nyasa district; at the confluence of the Biritsa stream with the Livelezi the boundary runs due west for 5 miles along the left bank of the Biritsa stream until its source is reached at beacon No. 9 of the Anglo-Portuguese boundary, the starting point.

The general topography is clearly defined, and naturally divides Central Angoniland into three distinct parts running from south to north throughout the district. Beginning from the west these three sections are:—

- (1). The Lower Plateau.
- (2). The Central Highlands.
- (3). The Lake Shore (in the extreme east).



(1). THE LOWER PLATEAU consists of an undulating plain, averaging over 3,000 feet above sea level; it is bounded on the east for 70 miles by the Dedza-Dowa highlands, and in the south by the Anglo-Portuguese border running from Pomve hill for a distance of 40 miles to beacon No. 5. The western limits of the lower plateau extend from Pomve hill along the Dzalanyama range for 50 miles to beacon No. 1, and from there for 40 miles along the North-Eastern Rhodesia boundary to the Mchinji hills. In the north the plateau extends to and along the telegraph line for nearly 60 miles to the Dzoole hills.

The average length and breadth of the lower plateau is 75 miles and 50 miles respectively, with an area of 3,750 square miles. The highest elevation (averaging 4,000 feet) of this plateau is reached in the Dzalanyama range, which contains the following heights:—From south to north:—Kasitu, Chefumbiriki, Kadedwa, Kampedza, Mputi, Fwiriri, Mluma, Cholansamu, Malunsi and Kampambe, and between beacon No. 1 and Fort Manning:—Mpembe, Kalumbe and Mchinji hills. Otherwise the plain-like character of this lower plateau is only broken by the following few hills and rocks:—In its southern portion from east to west:—Ngalangombe, Mchinji, Chekoma, Mlodezedzi hills and Zanzi rock; in the northern half:—Ngala, Bunda, Malungundi, Kachawa, Chitunda and Katingulu hills.

(2). THE CENTRAL PLATEAU consists of a high and hilly plateau situated between the above described lower plateau, on the west, and the lower lake shore on the east. It extends from the extreme south to the north end of Central Angoniland, and is bounded on the south, from beacon No. 5, for a distance of 23 miles, by the Anglo-Portuguese watershed and the upper waters of the Biritza stream. On the north, the central highlands extend for a distance of 30 miles from Dzoole hills to the upper waters of the Chirua river. The western part of the highland plateau contains the following principal hills and ranges, beginning at beacon No. 5, in a northerly direction:—Makungwa hills, Mbuziniomwe, Mpunzi hill. The latter is conspicuous on account of its long sierra like ridge and is quite unscalable on one side, which is burrowed by deep caves. Its bold appearance and height renders Mpunzi visible from almost every part of the Central Angoniland plateau. Then follows a chain of hills including Chigwenembe, Chencherere, Chiwau, Msinja, Mkuta, Mtuzi, Zezi and Chongoni, which latter is the largest and highest hill in Central Angoniland. It is quite 10 miles long and 3,500 feet high from its base. On the top of this hill there are several large *dambos* where, in the past, Achipeta natives sought refuge from capture and raid by the insurgent Angoni. North of Chongoni mountain the hill chains, including Unzi and Dzenga heights, slope gradually to the wide and fertile valley of the Lintipi river flowing east towards the lake. Crossing the Lintipe the western boundary extends to the north and is continued by the Chirenje range with its foot hills

extending to Nampala rock, and further north by Chiwamba and Chiwere hills as far as Dowa and Chirua river. On the east the central highlands are separated from the lake shore by almost inaccessible hills extending from Dedza for 35 miles to the Lintipe river. From here the ascent to the plateau becomes less steep, while the distance between the lake and the hills is considerably greater. Besides the hills mentioned on the western border of the highlands there are several other prominent heights, Mount Dedza itself, nearly 3,000 ft. from its base and 7,300 ft. above sea level, is a hill towering above the Boma buildings close to its foot. North-east of Dedza, Mwala Nkondo, Kambewi and Mlunduni hills, covered with dark forests, loom high above the sunny lake shore, 2,500 feet below their base. Still further north-east are Mironde hill and the Tambala and Chitundu ranges which extend as far as the Lintipe valley. North of this river there is Nkomo hill and to the north-east the extensive Tuma highlands, which are the steepest and barest range of hills in Central Angoniland. The average height of the Central Highlands is quite 4,000 feet, and its length and breadth 70 by 25 miles, with an area of 1,750 square miles.

3. THE LAKE SHORE section extends from the mouth of the Chirua to that of the Livelezi river, and has an average length of 70 and breadth of 20 miles, giving it an area of 1,400 square miles. When descending from the high plateau near Dedza to the lake shore the great difference in temperature causes the impression of leaving a temperate and suddenly arriving in a tropical zone of very fertile soil and abundant vegetation. The lake shore of Central Angoniland is almost flat with some low foot hills near the plateau, and one small range of hills near Rifu and Maganga.

Central Angoniland is on the whole well watered and its three principal rivers flow in an easterly direction to their lake terminus.

(1). The *Bua river* springs in the extreme west from the Mchinji hills near Fort Manning, and after flowing in a semi-circle for 40 miles it enters Marimba district at Nzama village.

(2). The *Lilongwe river* rises in the south-west from the Dzalanyama range, and, after flowing for about 90 miles, first in a northerly and then in a north-easterly direction, joins the Lintipe river about 13 miles from Lake Nyasa. It will be noticed that this river flows through each of the three geographical divisions of Central Angoniland. It is the longest and most important river, with its numerous tributaries, of which the Likuni is the largest, and distributes an abundant water supply throughout the district.

(3). The *Lintipe river*, which rises in the central plateau near Dedza, flows for the first 57 miles in a north-easterly direction and then south-east for 13 miles until it discharges into the lake. Its principal tributaries, the Diampwe and Tete rivers, are on its left bank. Before its confluence with the Lintipe the Diampwe is a much larger river than the Lintipe; it rises in the Dzalanyama



range, and waters the whole of the south-west portion of the lower plateau.

The central highlands are better watered than the lower plateau or the lake shore, where in the dry season nearly all the tributary streams dry up. Natives living on the inner lake shore and on the lower plateau far from the three main streams have often to carry water a day's journey to supply their most necessary requirements. Nearly all the rivers and many of the smaller streams contain hippopotami and crocodiles. Owing to a great extent to their careless indifference a certain number of natives are yearly killed by crocodiles, while hippopotami are responsible for much damage by feeding on the maize and rice crops.

There are numerous swamps in the rains both on the lower plateau and on the lake shore, especially in the valleys of the Diampwe, Tete, Likuni, Lilongwe, and the Bua and its many tributaries. After the rains, however, all swamps dry up except those caused by the Bua itself, which is more like a swamp than a river owing to its great breadth, muddy bottom and absence of current.

In general, Central Angoniland can be called a well wooded district. From the Dzalanyama range and its entire western boundary a vast belt of forest land extends as far as Bunda hill, and covers two-thirds of the lower plateau from west to east. Large and numerous *dambos* or plains are, however, interspersed in the forests. On the southern half of the highlands woodland is still plentiful enough, whereas the northern and eastern portions of this plateau are almost entirely deforested by the destructive and improvident inhabitants, who have thus rendered much of this land barren and quite unfit for cultivation; the natives are consequently fast abandoning their villages situated on the eastern edge of the plateau, and settling on the lower, richer and well wooded land of the lake shore. From the top of the high plateau the lake shore appears to be one vast forest with some open spaces indicating native locations.

The principal trees are:—(1). On the lower plateau: thorn trees, such as *mitete* and *misangu*; *mombo*, used by natives for making *mkwende* (bark cloth); *chiumbu*, *msumwa*, *mchere*, *mipembu*, *ditimbe*, *kadale*, *balitsa*, and *milombwa*. (2). In the central highlands: *misuku*, *mchenga*, used likewise for making bark cloth, *msumbuti*, *msopa*, *mpindimbi*. (3). On the lake shore: *mbawa*, *mlombwa*, *napini*, *msikezi*, *misagu*, and *mtondo*. the two latter trees being used for the construction of native canoes—*mvunguti*, from which *mitondo* (mortars) are made; *mgwalangwa*, which has wild edible fruit called *mabvumo*: *mkadau*—on which grows a small berry called *mchome*, used by native women to mark their faces under the eyes, and *mlambe* (baobab tree).

Firewood is plentiful except in the northern and southern portions of the central highlands, where destruction of all timber in the past has made it necessary to travel long distances towards

the lake shore or the lower plateau to collect wood for domestic purposes.

The rainfall for the lower and higher plateau varies very little and averages about 32 inches, which is quite sufficient for native crops. On the lake shore, however, the rainfall is much less, and almost every year a local drought is in some part or other recorded.

In a district where civilization is of such recent date and which possesses no written record or traditions, it is impossible to trace its authentic history further back than the memory of its oldest inhabitants. Even so it is extremely difficult, in the case of Central Angoniland, to ascertain reliable facts of past history owing to the reticency, the excessive dulness and want of intellect of its aboriginal inhabitants known by the interchangeable terms Achewa or Achipeta, and who now represent almost two-thirds of the entire population. Therefore, greater interest and value must be attached to the ethnology rather than to the history, as the former is based on easily determined and indisputable facts, whereas the latter, prior to the Angoni invasion, can only be the result of conjecture.

There are three predominant native tribes more or less scattered over Central Angoniland.

(1). *The Achipeta or Achewa*.—This tribe was from the time Central Angoniland became inhabited, indigenous to the district. They arrived here long before any other natives, for according to Portuguese history the lake shore (and Shire Highlands) was first peopled by a Bantu tribe known as the Amalawi. Early Portuguese settlers (as well as local native tradition) maintain that this tribe, called Amaravi by the Portuguese, was only a branch of other Amarawi, whom they left in their original homes between Sena and Tete in Mano's country, on the Kapochi river, near the Piriuntia hills (under Chief Undi). After living for years on the lake shore some of the Amalawi, who found this land too narrow for their fast increasing population, ascended the plateau, which, according to native tradition, was found uninhabited. It is impossible to fix even approximately the date of this migration, yet it must have taken place long before the arrival of the Angoni, whose oldest chiefs are quite agreed that both the lower and central plateau of Central Angoniland were occupied by the Achipeta long before their invasion. When they arrived on the plateau the Amalawi settlers changed their names and called themselves Chipeta, a word synonymous with *tsekera*, signifying tall and rank grass, which they found growing all over the plateau. They were also known by the name of Achewa to denote the language they spoke, which was called Chichewa. The Achewa, Chipeta and Amalawi of Central Angoniland are all natives of one stock, descended from the Amalawi, who originally settled on the Central Angoniland lake shore. The term Amalawi is still much used by natives in describing the lake shore by the contraction Kumalawi.

The Chipeta, who still form the bulk of the large population, inhabit the lower plateau, a considerable part of the northern and

in a less degree of the southern central highlands, and a fair number inhabit the lake shore.

(2). *The Angoni*.—The causes that induced the Angoni to abandon their home south of the Zambezi were, according to tradition, the authenticity of which is in this case without doubt, due to defeat in battle of this branch of the Zulu race by their more powerful chiefs Chaka, Gaza and Mzilikasi. Thus it was that some 72 years ago the first Angoni arrived under chiefs *Zongandawa*, leader of the Mpeseni Angoni, *Mputa*, of the Domwe Angoni, and *Mombera*, chief of the northern Angoni. In those days the Angoni spoke a language called Chiwazi, which, by intermixing with the Achipeta, has now almost become a dead language.

Since their arrival up to the advent of the Government the Angoni continually harassed and raided the Achipeta in the following order: (a). under chief Kaniangere or Ngombeere coming from the north, and (b). under chiefs Zongandawa and Mpeseni from the north-west. The Angoni soon crushed all resistance offered by the Achipeta living between Fort Manning and the Bua.

Under chiefs Chiwere and Msakambewa, a branch of the northern Angoni, the Achipeta chiefs, domiciled in the north-eastern part of the central highlands round Dowa and as far as the Lilongwe river in the lower plateau, were all subjugated with the exception of chief Odete near Chirenji, Kabuma of Chata, and Tambala. These three chiefs fortified their villages with mud walls called *machemba*, behind which they shot at the assailing Angoni with deadly effect with arrows, the barbed iron heads of which were smeared with various poisons, chiefly crocodiles' gall.

*The Domwe Angoni*, under chiefs Chidiaonga, Chifisi and Chikusi first conquered the Achipeta in the southern part of Central Angoniland, and then waged a guerilla war called *chifwambe* in the western and central portions of the lower plateau.

Had there existed greater harmony and combination amongst the various branches of these Angoni warriors, it is very probable that the present Achipeta would have been exterminated or entirely driven out of Central Angoniland. But very soon after their arrival the Domwe Angoni, under chief Mputa, fought for the possession of the Amatengo cattle with the Mpeseni Angoni under chief Zulu, when chief Mputa and most of his followers were slain in a hardly contested battle on the east of the lake. Later on the Angoni at Domwe split up into two factions, one under Kachindamoto, the other under Chikusi and Gomani, and called in the Tambala Yaos, who sided alternately with each faction, and continued internecine warfare until the arrival of the Government.

(3) *The Yaos*.—These natives may be divided into two classes as regards their land of origin and period of immigration, viz.:—

(a). *The Masaninga Yaos*, who crossed the lake from Mataka country in Portuguese East Africa, and who settled on the north

of the Central Angoniland lake shore at Kachulu and Domira Bay; and,

(b). *The Machinga* Yaos, who originally lived in the Machinga district (Mangoche), likewise in Portuguese East Africa, and whose arrival on the central portion of the lake shore at Chipole was contemporaneous with that of the Yaos now occupying the central highlands at Chitundu.

The population of Central Angoniland is about 300,000.

The staple foods are maize, millet, cassava, native sweet potatoes, beans, peas, ground-nuts, rice (on the lake shore), pumpkins, mushrooms, locusts and white ants (*inswa*), which latter act medicinally as a laxative.

The only method of cultivation practised by natives is hoeing. The soil in Central Angoniland by its great fertility entirely suits the love of leisure innate in all natives, who need only scratch the surface with a hoe and cover the seed by smoothing the soil over with their feet.

Amongst the Achipeta, Angoni and Yaos, spirit worship is still the chief form of religion. There only exists amongst these races a small difference in the personality of such spirits, *i.e.*, the Chipeta worship the spirits of their dead *uncle* and *grandmother*, which personages are looked on even in life by the Chipeta as their household gods. The Angoni worship chiefly the spirit of their deceased *father*. The Yaos are divided in their form of religion; some are Mahommedan, while others pray to the spirits of their dead relatives.

This district was formerly famous for the number of stock, especially cattle, possessed by the natives. Many of these, however, were in the first instance raided by the Angoni and later on bought by South African cattle dealers for trifles. Sheep are of the fat tailed kind, and the native owners are most unwilling to part with them. Goats alone are very plentiful and form the only asset of the Chipeta portion of the population.

In this district, which is so far distant from all labour markets, and which does not possess any internal industries, the natives have to travel far in order to obtain money to pay their hut taxes and to supply their domestic wants. Under these conditions Central Angoniland has for many years supplied almost all the labour required in the Shire Highlands and on the lower river for the planting and trading industries of the Protectorate.

There are three government stations in Central Angoniland, *i.e.*, Lilongwe, the central residence of the Resident responsible for the district, Dedza and Dowa the residences of two Assistant Residents for the two sub-districts.

Efforts have lately been made to encourage the native cultivation of cotton and rice as affording the best and most natural means for the natives to obtain the money necessary for the payment of their hut taxes, etc.

It would be incorrect to say that, considering the area of the district, game is plentiful. The ever increasing population and



cultivation of forest land is causing game gradually to recede in a westerly direction. Yet species of almost every kind of game existing in the Protectorate are represented in Central Angoni-land, only nyala, lechwe, and situngu being absent. Elephant are numerous, and a game reserve has been declared for their better preservation. Lions and leopards are plentiful and every year cause a considerable number of deaths amongst the natives, besides killing a quantity of large and small antelope.

The district is very well supplied with both main and district roads. The main trunk road, which connects Chiromo with Karonga at the southern and northern ends respectively of the Protectorate, runs for 91 miles through Central Angoni-land and forms for 50 miles the new overland mail road to Fort Jameson. Starting from Dedza this road leads in a north-westerly direction through the lower plateau and across the Tete, Diampwe, Nanjiri and Lilongwe streams to the head station at Lilongwe. Then it takes a north-easterly direction for 27 miles across the Lombadzi stream to Dowa sub-station, and from there for 14 miles north-west to the Marimba boundary. District roads, covering 596 miles, are hoed and repaired annually. Every Euro-pean station is connected by a road to the nearest point of a district or main road.

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## 6. South Nyasa.

The district is bounded as follows:—

On the north by the shores of Lake Nyasa, on the west by the Livelezi river as far as its junction with the Domboli stream, on the south by a line running east and west cutting the Upper Shire river one mile below its exit from the south end of Lake Malombe, on the east by the Anglo-Portuguese boundary to where it touches the south-eastern shore of Lake Nyasa, in latitude  $13^{\circ} 30'$ .

The principal feature of the eastern division of this district is the triple range of hills running in a northerly direction almost parallel with the eastern shore of Lake Malombe, culminating at Fort Mangoche, 5,450 feet above the level of the sea, and continuing along the eastern shore of Lake Nyasa to and beyond the most northerly point of the eastern boundary of the district. The Anglo-Portuguese boundary practically runs in a straight line along this range of hills. Mangoche is about 18 miles from Fort Johnston by road, or 14 miles in a direct line. Fort Johnston, the capital of the district, is situated on the left bank of the Upper Shire river, about six miles south of its exit from Lake Nyasa.

West of the waterway dividing this district is another prominent range of hills running nearly parallel to the western shore of Lake Malombe, the Upper Shire river and Lake Nyasa as far as Livingstonia, the most northerly point of the west side of the district. This range extends as far back as Pirilongwe mountain (about 3,500 feet above the level of the sea) approximately 20 miles west of Fort Johnston. This mountain is the principal

feature of this hilly part of the country and, being situated in the centre of the western division of the district, affords an excellent landmark from most points of view. Travelling is difficult in the hills on account of the extreme irregularity of the country. Westward of this range a large plain extends to the Livelezi river. This plain is badly watered in the dry season, and not very thickly populated.

The South Nyasa district is well wooded, the hills are all covered with fairly tall but slender trees and the plains with a somewhat larger kind of forest. No difficulty is experienced in penetrating these forests during the dry season, after the grass is burnt, but during the rainy season grass is generally found from 6 to 12 feet high effectually stopping all travelling off the native paths which intersect the whole district.

Lake Malombe formed part of Lake Nyasa at one time. The soil of the whole of the basin between the two ranges of hills alluded to is of a sandy nature, but on the shores of the lake and on the banks of the river very rich alluvial soil is found. In the hilly parts of the district and under the hills the soil is of a clayish nature generally lying on rock. Under the west side of Piri-longwe clumps of virgin forest may still be found, but most of the soil on the plain between this mountain and the Livelezi river is that black variety commonly called "cotton soil." This district has not yet been prospected. The general formation is granitic. A reef of limestone runs through it in a northerly direction.

The only navigable river in the South Nyasa district is the portion of the Upper Shire river which runs between Lakes Nyasa and Malombe, navigation being only possible, however, for a few months in the year. There are two light-draught steamers plying between Fort Johnston and Liwonde when the river is deep enough. The Upper Shire river is from 200 to 300 yards wide according to the season, and anything from 1 to 20 feet deep. This river is dependent on Lake Nyasa for a uniform depth of water. Latterly the lake has not maintained its level, and consequently the whole of the Shire river has been seriously affected. For several years now there has only been, during the dry season, some 3 to 4 inches of water on the lake bar.

The only other rivers in the district that need mention are the following :—

The Livelezi, on the western side, which rises near Mlangeni, in the Upper Shire district, and runs in a northerly direction into Lake Nyasa; the Tamankokwe, which rises near Piri-longwe and flows in an easterly direction into the Upper Shire, about two miles above Fort Johnston; the Nasenga, which flows through the hills running parallel with the western shore of Lake Malombe into that Lake; the Sangasi, which flows in a northerly direction into the south-west arm of Lake Nyasa, rising near Piri-longwe; and the Bwanji, which rises in the Upper Shire district and runs in a northerly direction and practically midway between the Sangasi and the Livelezi into the same arm of the lake. All these



rivers are full of water during the rainy season, but during the dry season lose themselves in the sand of the plains. In the eastern division of the district the Mandimba river rises near Mangoché and flows eastwards into Portuguese territory; the Lingamadzi also rises near Mangoché and flows into Lake Malombe.

The Upper Shire river is crossed by means of canoes and small boats; the other rivers are all fordable.

Lake Malombe is 15 miles long and 10 miles wide, and has a bottom of soft mud. There is a certain amount of marsh land about the lake shores which is utilized for growing rice.

On the lake shore and on the banks of the Upper Shire water is, of course, plentiful throughout the year. The water in the various smaller rivers is also fit to drink. In the dry season, when running water is not found in the plains sufficient for drinking purposes, it can nearly always be found by digging a small hole in the bed of a stream. That part of the district known as the Chipata and Kola district, lying between the Pirilongwe range and the Livelezi river, is the only part where water is very scarce and unfit for drinking purposes.

The average annual rainfall for Fort Johnston is 28 inches, and the average mean temperature  $76^{\circ}$ . The rainfall in the higher parts of the district is naturally considerably in excess of this.

The following is a list of the hoed roads in the district:—

	MILES.
Fort Johnston to Fort Maguire, ...	73.7
"    "    Mvera (east side) ...	22
"    "    Upper Shire district boundary (west side)...	23
"    "    Monkey Bay ...	41
"    "    Kampulusa ...	60
"    "    Chiripa ...	30
"    "    Mangoché ...	18
"    "    Namwera ...	16
Namwera    "    Nyambi ...	25
"    "    Lilindi ...	8
Lilindi    "    Kwisimba ...	25
Kwisimba    "    Chaponda ...	12
Monkey Bay    "    Livelezi ...	31
Livelezi    "    Kampulusa and Piriwisa ...	60
Simba    "    Malembo via Chileka ...	32

All these roads are from 12 to 15 feet wide, and kept clean throughout the year. The following is a more minute description of the principal ones.

The Fort Maguire road is level to a little way past Chilinda's (approx. 60 miles), thence to Fort Maguire (Matola's) it is slightly undulating. The road runs parallel with the lake, and at a distance varying from a quarter to half a mile until reaching Chilinda's. At this point the lake shore runs in a W.N.W. direction, while the road continues N.N.W. and meets the lake again at Matola's. The surrounding country consists of palm and thin forest. Ndoka's (25 miles), Sayidi Mzungu (37.8) and Chilinda's (58) form convenient camping grounds. A cycle can

be used the whole way except for half a mile of very thick sand near Kadango's village (31 miles) and another stretch of three-quarters of a mile between Sayidi Mzungu and Lipongo. None of the streams, twenty in all, are bridged.

The road to Mangoche winds round the north side of Chiusi hill, which is opposite Fort Johnston about 3 miles away. The road is rough and in places steep. About half way to Mangoche the Lingamadzi river is crossed, and about  $1\frac{1}{2}$  miles further on there is a branch road to Namwera's village, where there is a Government house. This is not a good road for a cycle though one can be used.

The road to Liwonde (west side) is well made, level and excellent for motor or ordinary cycle.

The road to Monkey Bay runs parallel with the lake shore at a distance from it varying from half to one mile. The surface is for the most part good, and notwithstanding one or two sandy places a cycle, either motor or otherwise, can be ridden as far as Mbwadzulo's village, a distance of 34.3 miles from Fort Johnston; from this point however into Monkey Bay (41.1 miles) the sand is too loose to admit of any riding. The journey can be comfortably made in two stages by camping at Chiwalo's (26.8 miles) where there is a huge tree giving splendid shade. During the heavy rains a large part of this road is under water. The Tamankokwe is the only large river to be crossed.

The road from Monkey Bay runs across the Livingstonia peninsula, striking the south-west arm of Lake Nyasa at Kasanga's village, and then running parallel with the lake. The Sangasi and Bwanji have to be crossed, but both are dry for the greater part of the year. The Sangasi is  $1\frac{1}{4}$  miles from Kasanga's village, and the Bwanji 20.4. Between the two rivers mentioned there is a smaller stream called the Nangolokola, running nearly the whole year but always easily fordable.

For travelling direct from Fort Johnston to the south-west arm of the lake a road has been made (7 miles in length) leaving the Monkey Bay road just after the 33rd mile post, joining the old road again at Kasanga's. This reduces the distance by 7 miles and avoids the sand and hills near Monkey Bay.

The remaining roads are hilly and rather rough and only to be recommended for walking or machila. In addition to the roads tabulated above there are many smaller paths of 6 to 8 feet wide, especially in the western part of the district, connecting village to village.

In addition to three European stores there are native markets at Fort Johnston and Namwera's (Mangoche) at which native grown vegetables, eggs, fowls, sheep and goats are sold. The local price for eggs is 1/- for 40, fowls 1/- for 6, sheep 5/- to 10/- each, goats 2/- to 5/- each. Fowls and eggs are fairly plentiful. The native is rapidly learning to appreciate the benefits of a market, and to realize the advantage of a central spot for exchange of goods, and a considerable amount of bartering is seen every day.

Most of the Europeans at Fort Johnston have gardens on the river bank, where nearly every European vegetable is grown. Mangoes, strawberries, custard apples, pineapples and papaw also thrive.

Guinea fowl, partridge and duck are numerous, and native hunters may be seen daily carrying these in to their European employers.

Including Government cattle there are (last census) in the possession of Europeans in the district—507 head of cattle, 266 sheep, and 164 goats.

There are no European planters in the district.

The staple food of the Yao and Nyasa is maize, and of the Angoni naere (eleusine). In addition to this, millet, ground-nuts, beans, cassava, sweet potatoes and bananas are grown in considerable quantities.

Very few of the villages on the plains grow sufficient for their wants throughout the year, preferring to depend on the produce brought down for sale by the natives of the higher parts of the district.

A large quantity of rice is grown on the lake shore, and a ready market is found at the local stores, both European and Indian.

Cotton is grown to a small extent.

Although there is no tsetse fly in Fort Johnston itself, it is to be found in the district, especially the western portion, and for this reason cattle amongst the natives are not numerous. There are at present 99 head of cattle, 240 sheep and 4,300 goats owned by Africans.

There are five tribes represented in this district, viz., Yao, Angoni, Nyasa, Abisa and Asenga. The Yaos are the predominating tribe. They are physically strong and well made, and well disposed. They are not naturally fond of agriculture but make excellent artisans, soldiers, police and servants.

These Yaos may be sub-divided into three distinct classes:—Masininga Yaos, living in the north-eastern part of the district round Fort Maguire; Mangoche Yaos, in the east; and Machinga Yaos, occupying the country on the west between the lake and river and a line drawn from Pirilongwe due south to the southern boundary and north-east to Monkey Bay. The tribal mark of all these is the same: two short cuts on each side of the face between the eye and ear. They are not indigenous inhabitants but have come in as a conquering people from the east, driving out the Nyasa in places and in others settling amongst them.

The Nyasa are an inferior tribe both physically and intellectually to the Yao. They are found mixed up with the Yaos all along the west bank of the river and lake shore, and round Livingstonia and the south-west arm of the lake. The Nyasa are the original inhabitants of the whole of the south end of the lake. Before mixing with the Yaos they had no tribal marks on the face

but on the back; now, however, they are using the same marks as the Yaos.

The Abisa, who have settled near Livingstonia on the south-west arm of the lake, are few in number. They migrated here from the regions round Bangweolo, North-Eastern Rhodesia, some twenty years ago, and are apparently allied to the Awemba tribe. The Asenga likewise, from Luangwa, are evidently of the same branch as the Abisa, their language being closely related and their tribal marks identical. These marks consist of groups of small round dots on the forehead, over each eyebrow, in the centre and on each side of the face. The Angoni apparently came into the district about eighty years ago from the south of the Zambezi as an offshoot from those that went up further north and conquered the country round the south-east of Tanganyika. They are now a quiet and peaceable people, and fond of agriculture. They occupy that part of the country lying west of a line drawn through Pirilongwe north and south. The Angoni tribal mark is three longitudinal lines over each eyebrow.

The following is an approximate census of the district—

Yaos.	...	...	...	48,500
Angoni.	...	...	...	15,000
Nyasa.	...	...	...	10,000
Abisa.	...	...	...	400
Asenga.	...	...	...	100
Total.				74,000

The various initiation ceremonies practised by these tribes are still maintained though slight modifications have been introduced (in particular amongst the Yaos) under the influence of Mahommedanism. The Angoni have no such ceremonies.

Notwithstanding the constant efforts which are being made to stamp out the *ula* or *chisango*, that is, the casting of lots in the event of a death in a village to find out who is the cause and the drinking of *mwabvi* poison by the accused, it is still prevalent with all the tribes, though the Angoni have only adopted it of recent years. Previously, in the event of a death amongst the Angoni, every one in the village took *mwabvi* to prove innocence.

Another old custom which is now rapidly falling out of fashion is the use of the *pelepele* (a large disc of lead or wood worn in the upper lip by women), and the *chipini* (a plug of bamboo, lead, or even candle, worn in the nose). On the other hand, the wearing of several small discs in the ear (a custom brought in from the coast) is becoming very fashionable amongst the Yao women of the east shore of the lake.

A small spear or a knife in the belt is generally the only weapon now carried by natives when travelling, but the Angoni on special occasions for dances and like festivities will don their full war costume of earlier days.



There are in the district 11 natives in possession of breech-loading guns, and 26 with muzzle-loading guns. These, with the exception of a small number lent to various headmen by the Government, are the only fire-arms in the possession of natives.

The following are the most important chiefs:—

*West side*:—Yao. Mponda (paramount chief), Majawa, Matawiri, Chiripa.

*East side*:—Yao. Chematilo (paramount chief), Matola, Biti Kalanji, Mkumba, Chindamba, Nkate.

*Mangoche*:—Yao. Chowie, Nyambi.  
Nyasa. Mpinkanjila, Nankumba, Chembe.  
Angoni. Kampalusa, Ndindi.  
Abisa. Kasanga.

All these headmen look after their villages well and keep their people in good order, helping the Government to the best of their ability in collecting the revenue, settling small disputes, and in any other matter they may be called on to do.

The natives are for the most part heathens. If a census were taken by asking each person what his religion is at least two-thirds of the Yao and Nyasa population would proclaim themselves Mahommedan, but this is by no means truly the case. At least half of the number so professing only do so because they consider that it will give them a better social standing in their villages, and are neither in heart nor in practise Mahommedans. Nevertheless, Mahommedanism is rapidly growing and beginning to compete seriously with Christianity.

There are three missions in the district, viz.:—

The Universities Mission to Central Africa, on Lake Nyasa, with 11 schools and 361 pupils. The Dutch Reformed Church Mission, in the west amongst the Angoni, with 32 schools and 3,666 pupils; and the Baptist Industrial Mission, with 5 schools and 160 pupils.

These two latter missions are working amongst Angoni not yet touched by Mahommedan priests, and their easier success is more apparent.

Game of every description is plentiful, probably more so than in any other district; 228 head were killed under licence during the year 1908-9. Kudu, sable, eland and all the smaller kind of buck are found in nearly every part. Elephant also are plentiful, six being shot in 1908-9. Hippopotami cause considerable damage to the rice crops on the lake shore, and natives are now and then carried off by crocodiles, especially during the rainy season. Lions and leopards occasionally carry off sheep and goats from village kraals.

## 7. Upper Shire.

The district is bounded on the north by an imaginary line running due east and west and cutting the Upper Shire at a point one mile below its exit from the south end of Lake Malombe; on the east by the Zomba range and by the line of water-parting between the watersheds of the Upper Shire and Lakes Chilwa and Chiuta; on the west by the Anglo-Portuguese frontier; on the south by a straight line drawn due east from the said frontier to the source of the Luangwa river (an affluent of the Lisungwe river) and from the said source by a straight line drawn in a south-easterly direction to the right bank of the Shire river at the commencement of the Pamfunda rapid (the second rapid down stream from Matope), and thence by the right bank of the Shire up stream to a point one mile above the African Lakes Corporation's station at Matope, and thence by a straight line drawn due east across the Shire river to meet the Mpimbi-Blantyre road, and thence by the Mpimbi-Blantyre road to its junction with the Mpimbi-Zomba road, and thence by the Mpimbi-Zomba road to its meeting with the Zomba range.

The northern boundary has been further modified to meet the requirements of district administration in the following manner:—

From Kambuku village on the Bwanji river the boundary is formed by a hoed path running in a westerly direction to Mluma hill, and thence along the west bank of the Livelezi river to the Biritsa stream (an affluent of the Livelezi), and thence along the south bank of the Biritsa to the Anglo-Portuguese frontier.

On the west the only mountain range of importance is the Kirk range, running north and south and forming the frontier between British and Portuguese territories. The average altitude of this range is 4,500 feet, with a maximum altitude of 6,000 feet.

From this range the country descends more or less gradually to the Shire river (1,490 feet). The intervening country is broken by ranges of low hills with occasional prominent peaks.

On the east are the Zomba range which lies partly in the Zomba district and forms the inter-district boundary; the Mongorwe range which lies north of the Zomba range and runs north and south, and the Chindusi hills which lie between the Zomba range and the Shire river. The Mongorwe range runs at an altitude of some 2,000 feet, Chindusi peak is 2,504 feet.

The only river of importance in the district is the Shire. This river is generally navigable all the year round for light-draught barges and for river-steamers from January to September. Since 1902, when the Protectorate suffered from an unusual drought, this river has become covered with a kind of 'sudd' weed, which tends to render navigation more difficult.

With the exception of the Livelezi, which flows northwards into Lake Nyasa, the other rivers of the district are merely



tributary streams of the Shire, swift-flowing torrents in the rainy season and generally dry towards the latter end of the dry season. The principal streams entering the Shire from the west are the Rivirivi, which flows eastwards from the Kirk range and joins the Shire at Mpimbi, and the Lisungwe, which rises in the Kirk range and flowing in a southerly direction enters the Shire at a point some 20 miles south of Matope. Both streams have a number of small tributaries, and drain the eastern slopes of the Kirk range.

The principal streams on the east are the Likwenu—which rises in the Zomba range and, passing between Mangorwe and Chaoni mountains, carries the drainage of those mountains to the Shire at a point one mile south of Njunguni hill—and the Lisanjala, which takes the drainage of the western slopes of Zomba range and flowing southward enters the Shire at Mpimbi.

There are no forests which require particular mention, but the whole district (with the exception of the higher portions of the Kirk and Zomba ranges) is well covered with timber with an occasional grassy plain (*dambo*).

There are no swamps of any considerable depth or area or which offer any difficulty to transport. Such small patches of swamps as are crossed by main roads have been overcome by raising the level of the road.

The rainfall is from 30 to 40 inches per annum. The rainy season is from November to March inclusive, the heaviest falls occurring during December, January and February.

Water is well distributed throughout the district. In the rainy season it may be obtained at almost any point. In the dry season water may be obtained in pools and water-holes in certain parts of most of the streams, and in the driest season could be found within 10 or 15 miles of any given point, or in exceptional cases within 20 miles.

- |                   |   |
|-------------------|---|
| A. Main roads.    | (1). Zomba-Liwonde-Mlangeni.              |
|                   | (2). Blantyre-Mpimbi-Liwonde-Mvera.       |
|                   | (3). Liwonde-Fort Johnston.               |
| B. Branch roads.  | (1). Ncheu to join Liwonde-Mlangeni road. |
|                   | (2). Ncheu to Chirole.                    |
|                   | (3). Ncheu to Ntumbi.                     |
|                   | (4). Ntumbi to Mwendang'ombe.             |
|                   | (5). Kapene river to Matope.              |
| C. Disused roads. | (1). Zomba to Mpimbi.                     |
|                   | (2). Old Liwonde-Mlangeni road.           |

A. (1). Zomba-Liwonde-Mlangeni road: Section 1, Likwenu-Liwonde, length 15 miles. This road from Zomba enters the Upper Shire district at Likwenu, where there is good water and a rest house. It is a good camping-place, altitude 2,500 feet. The Likwenu stream is crossed by a bridge, width of stream 25 feet, banks high. The road from here to a point  $9\frac{3}{4}$  miles from Liwonde is undulating, gradients not excessive. Good camping

ground could be found anywhere between the 12th and 10th mile posts (from Liwonde) as a perennial stream runs parallel to and near the road all the way. From the  $9\frac{3}{4}$  mile point there is an abrupt fall of 300 feet in three-quarters of a mile. Thence to a point 7 miles from Liwonde is fairly level, the last 7 miles into Liwonde being a gradual descent.

From Mkula's (old village)  $8\frac{1}{2}$  miles from Liwonde to the Ntubwi stream there is no water at any time. Three miles from Liwonde is a hot-spring, 500 yards north of the road, from which excellent water may be obtained at all times.

The whole of the road from Likweni to Liwonde is an easy one for carriers and suitable for hand-carts, but too narrow in parts for larger vehicles. All the rivers and streams are bridged.

Section 2, Liwonde-Mlangeni, 62 miles.

Fort Mlangeni to the Liwawadzi river. The road from Fort Mlangeni to Liwonde, via Dongera hill, is almost throughout its entire length of 62.1 miles a barrelled one and suitable for vehicular traffic and for cycles.

Camping grounds are as follows:—

Ncheu (Government rest house) 14.7 miles from Ft. Mlangeni

Nkame river ... .. 26 ,, ,, ,,

Balaka's village (Govt. rest house) ... .. 32 ,, ,, ,,

Liwawadzi stream ... .. 45.6 ,, ,, ,,

There is a gradual downward slope from Fort Mlangeni to Liwonde.

Liwawadzi to Liwonde. From Liwawadzi river to the crossing of the Banda road ( $3\frac{1}{2}$  miles) the road rises considerably. From Banda crossing to Chendausiku's village (4 miles) the road is fairly level. From Chendausiku's to Liwonde (9 miles) the road descends the whole way. Water can be obtained at Chendausiku's, at Dongera stream (8 miles from Liwonde) at Manga's (a little off the road and to the south of it), 3 miles from Liwonde.

(2). Blantyre-Mpimbi-Liwonde-Mvera road. This road crosses the southern boundary about 2 miles south of the Lintipe river, and is crossed by a ford; width of stream about 30 feet, banks rather high, bottom sandy. Three miles further north the Lisanjala river is crossed, width of stream about 50 feet, banks low, bottom sandy. A mile north of the Lisanjala the road passes through Mpimbi. Water can always be obtained at the two rivers above mentioned. From Mpimbi to Liwonde (17 miles) the road closely follows the Shire river, and water can thus be obtained at all seasons and at any point. This part of the road is quite flat, but as it runs parallel to the river the whole way it is constantly intersected by small tributaries of the Shire. There are twenty such streams, all of which are spanned by permanent bridges suitable for cart traffic and capable of carrying one ton. The Shire is crossed at Liwonde by ferry, and the road from Liwonde to Mvera is continued along the west bank of the Shire. It follows the river fairly closely for the first 15 miles as far as the

Nkasi river, and from there takes a straight course to Chapola's village on Lake Malombe, a distance of  $9\frac{1}{2}$  miles. A branch road to Mvera leaves the main road at Nkasi stream. Distance from Nkasi to Mvera,  $5\frac{1}{2}$  miles. From Liwonde to the Nkasi water can be obtained at the river at any part. From Nkasi to Chapola's water is difficult to obtain in the dry season. From Liwonde to Chapola's 24 streams intersect the road, all of which are spanned by permanent bridges capable of carrying one ton.

(3). Liwonde-Fort Johnston.

B. (1). Fort Mlangeni to Ncheu, via Fuko's village and Dombole. This road, so far as a route for cycles is concerned, has been superseded by the new road from Fort Mlangeni to Ncheu via Dongera hill, and is used by travellers in machilas and by carriers. From Fort Mlangeni there is an abrupt down hill gradient till the valley is reached, whence the road traverses level country until about 2 miles from Ncheu, when an up hill gradient is encountered. The new Fort Mlangeni-Ncheu road is joined at a distance of  $1\frac{1}{4}$  miles from Ncheu. The distance from Fort Mlangeni to Ncheu by this road is 12 miles.

(2). Dombole to Ndemvu hill. This road branches off from the old Fort Mlangeni-Ncheu road near the southern boundary of the Zambesi Industrial Mission Dombole estate and passes near Chiole (Zambesi Industrial Mission) estate and thence through the villages of Chiefs Kamwendo and Kwataine until it cuts the new Fort Mlangeni-Liwonde road at Ndemvu hill, which is some  $5\frac{3}{4}$  miles from Ncheu. At Ndemvu hill it joins the road to Ntumbi, where it splits into two branches, one going onwards to Matope and thence to Blantyre, the other proceeding to the Mwendang'ombe stream on the boundary of the West Shire district and thence to the Shire river. The road from Ndemvu hill to Dombole is largely used by carriers and also by the public.

(3). Ncheu to Matope. The new Fort Mlangeni road to Liwonde is followed for a distance of approximately 5 miles from Ncheu, at which point the road known as the Ntumbi road branches off on the right. This latter road is followed past Ndemvu hill, a gentle downward slope leading to the Mpamadzi stream. (About 8 miles from Ncheu the road known as the Ntumbi-Mwendang'ombe road branches off sharp to the right). From the Mpamadzi stream the surface is level, though strips of this portion of the road are marshy in the middle of the rainy season. The Rivi-Ridzi stream is crossed at a point 13 miles distant from Ncheu, and here a suitable camping ground is offered upon the Rivi-Ridzi estate of the African Lakes Corporation. From this estate to within 3 miles of the Kapene stream the surface is not only rough but an up and down country is traversed. From the Kapene to Matope the road presents a good surface. Camping grounds beyond the Rivi-Ridzi are Mpezi, which is 27.3 miles from Ncheu, and Kaninga's village, 40 miles from Ncheu. At Matope, 49.4 miles from Ncheu, there is a station and rest-house of the African Lakes Corporation. The sole drawback to

this road is the fact that towards the end of the dry season no water is to be found between Mpezi and Kaninga's village, a distance of about 13 miles.

Tsetse fly is met with at the Kapene stream, and thence in varying belts to Matope.

The distance from Matope to Blantyre is 32·7 miles. At Lirangwe, which is 12·7 miles from Matope on the way to Blantyre, there is a brick rest-house of the African Lakes Corporation.

On an ordinary cycle the journey from Ncheu to Matope can be accomplished in  $4\frac{1}{2}$  hours in the dry season.

(4). Ntumbi to Mwendang'ombe stream. (For Ncheu to Ntumbi *vide* No. 3.)

This road passes in the immediate neighbourhood of the Blantyre Mission station at Ntumbi and after passing the Rivi-Ridzi stream (or, as it is known only in its upper source, the Rivi-Rivi stream) follows through low-lying country to the Ntonda estate of the Zambesi Industrial Mission, where the Kapene stream is crossed by a bridge. From Ntonda the road passes through very hilly and broken country, crossing the Likudzi river, thence 8 miles to the Lisungwe river, and thence 6 miles to the Nyarudzi still through hilly country. From the Nyarudzi stream it proceeds through a far more level country until the Mwendang'ombe stream is reached, which is the boundary between the Upper Shire and West Shire districts. From the Mwendang'ombe there is a good road to the Shire river.

Camping grounds are as follows:—

Kapene stream (Ntonda estate)	17 $\frac{1}{2}$	miles from Ncheu.
Likudzi	29 $\frac{1}{2}$	„ „ „
Lisungwe	37 $\frac{1}{2}$	„ „ „
Mwendang'ombe	48	„ „ „

(5). Ncheu to Chiolo (Zambesi Industrial Mission station). The main Fort Mlangeni-Liwonde road is followed for a distance of  $1\frac{1}{4}$  miles from Ncheu, whence the road for Chiolo branches off at right angles on the right hand. From this spot a somewhat marked downward gradient leads to the Chiolo Mission. The distance from Ncheu to Chiolo via Kefa village is  $2\frac{1}{2}$  miles. The road is well suited for cycles.

The following roads are kept cleaned by villagers only:—

(1). Dongera hill to the Anglo-Portuguese boundary *en route* for Mtengo-wa-Mbalame Portuguese Boma.

This road branches off from the new Ncheu Fort-Mlangeni road in the neighbourhood of Sanjiki hill (also known as Mbale hill) and proceeds through Chief Chipusire's village at Dongera to the Portuguese boundary near Lipepete hill, whence the road is continued through Portuguese territory to Mtengo-wa-Mbalame.

(2). Boundary roads (where they are not main roads) are maintained by natives.

(a). The Ncheu-South Nyasa boundary road is hoed from Mluma hill to beyond the Bwanje stream.



(b). The boundary road between British and Portuguese territory so far as the Ncheu sub-district is concerned is also hoed by natives where necessary.

C. Disused Roads: Zomba to Mpinbi, 18 miles. This was formerly the main road from Zomba to the Upper Shire river, but has been very little used since the Zomba-Liwonde road was constructed. It is winding and very hilly, particularly at Nami-tembo, and is only of use for foot passengers.

Old Mlangeni Road. The Old Mlangeni road took a north-westerly direction from Basali (17 miles west of Liwonde) and reached Mlangeni *via* Banda, Dzunji and Gowa. This route was found inconvenient owing to scarcity of water in the dry season, and was altered to the present route. It is serviceable only for foot passengers.

The number of live-stock in the district is (approximately) as follows:—

Cattle	...	...	...	679
Sheep	...	...	...	3,000
Goats	...	...	...	10,000

The usual prices are: cattle 50/- to 60/-; sheep 5/- to 8/-; goats 3/- to 5/-.

The usual crops grown by natives are Indian corn, millet (mapira), sweet potatoes, ground-nuts, various kinds of beans and in certain parts cassava. Vegetables such as pumpkins, brinjalls (mabringano), a kind of a cucumber (mankaka), spinach (bonongwe), etc., can also be obtained in most places. Few fruits are grown by the natives with the exception of a coarse kind of banana. All native foodstuffs are stored in round mud-and-thatch stores raised off the ground on forked poles. Fowls and eggs are obtainable in most villages: prices, fowls 5 or 6 for 1/- according to size—eggs 6 for 1d. Goat's milk can be obtained occasionally, and cow's milk in the Ngoni country where cattle are kept.

The native population of the district is about 71,500, and is increasing slowly but steadily.

The tribes inhabiting the district are as follows:—

1. Angoni-Chipeta.
2. Ayao.
3. Anyasa.

The original inhabitants of the district were Achipeta and Anyasa. The Angoni-Zulu, who came from south of the Zambezi, and the Ayao, who came from East Africa, arrived much about the same time, probably the middle of last century. The peaceful Anyasa and Achipeta offered but feeble resistance to these warlike tribes, and soon became their dependants.

*Angoni-Chipeta.* The Angoni have intermarried with the Chipeta until the two races have become almost completely fused, the Chipeta strain being decidedly the stronger. Their language is pure Chipeta, and only the older people remember their original



tongue (Zulu), although some of the Zulu songs are still in use among the younger people. They are a pastoral people, and their warlike disposition is fast disappearing. They are on friendly terms with Europeans, industrious, and contribute largely to the labour supply of the Protectorate. Their standard of morality is higher than that of the other tribes.

*Ayao.* This tribe lived originally near the east coast of Africa, and moved gradually westward raiding the countries in which they settled and enslaving or selling the inhabitants. They profess Mohammedanism. Their standard of morality is far below that of the neighbouring tribes, and they are by nature indolent. They are fairly brave, and make good soldiers. They are perforce upon amicable terms with Europeans, but as Mohammedans they naturally regard them as infidels and for whom they probably have no great liking.

*Anyasa.* These (with the Chipeta) were the original inhabitants of the country, a peaceful, agricultural, industrious and law-abiding people. The Ayao have not intermarried with the Anyasa to the extent the Angoni have with the Chipeta. This is no doubt due to the Yaos being Mohammedans. In addition to the above mentioned tribes there are small communities of Alolo, Makalolo, Mang'anja and Chikunda settled in the southern part of the district, who cannot be reckoned as complete tribes.

The weapons at present in the hands of the natives are not of a very formidable description. The Angoni arms were cow-hide shield and spear. The shield is getting rather into disuse, and is not often in evidence. The Yao used muskets and spears. These muskets are very few, and they seldom carry spear or axe unless for protection from wild beasts. The Anyasa possess few weapons excepting an occasional axe or spear for protection from beasts. There are very few guns in the hands of natives, as most of them were seized when the country was under martial law, and those remaining have mostly been gradually confiscated in default of payment of gun-licence. There is little powder or other ammunition in their possession and they have few opportunities of replenishing their supply.

The main through-transport of the district is carried on the Shire river. Water-carriage by light-draught steamer and barge is possible between Liwonde and Fort Johnston from January to September, and for barges only during the remaining months of the year. It is possible for barges to travel as far south as Matope during the above-mentioned period. Transport in all parts of the district other than those bordering the river must be effected by native carrier as the presence of tsetse fly forbids the employment of oxen or other animals for transport purposes.

The cost of transport by native porter is (roughly) 1/- per load of 50 lbs. per 30 miles. Loads should be limited to a weight of 50 lbs. as far as possible. A load of 90 lbs. for two men (slung on a pole) makes a fairly convenient package. Anything heavier

would be too cumbersome, and would have to travel more slowly than the lighter loads. If continuous, steady work is required of carriers they should be supplied with a daily ration of  $1\frac{1}{2}$  lbs. of rice or 2 lbs. of grain and a little salt per diem.

It is more difficult to obtain carriers during the months of December, January and February than at other times as the natives are then busy with their gardens. All the Government roads in the district are suitable for ordinary and motor bicycles, and this method of travelling for Europeans is much to be preferred to that of machilas, which is slow and uncomfortable.

The European stations established in the Liwonde sub-district are as follows:—

*Chindusi and Mpimbi* on the British Central Africa Company's Upper Shire estate. The former is purely an agricultural establishment for the cultivation of cotton; the latter is the chief station of the company in the district, where cotton and tobacco are cultivated extensively. The ginneries of the Company are established at Mpimbi.

*Namitembo.* Cotton is cultivated here by the same Company.

*Magomero.* At this plantation of the British Central Africa Company 40 acres have been put under coffee.

*Basali.* 20 miles west of Liwonde and 1 mile south of the Liwonde-Mlangeni road, where cotton cultivation is carried on by Messrs. Blair and Thirsk.

*Lingoni.* An estate of "Blantyre and East Africa, Ltd.," on the Likweni river; cotton and rubber are cultivated.

The following estates are in the Ncheu district:—

*Chiole, Ntonda and Dombale.* These are estates and stations of the Zambesi Industrial Mission which carries on mission work amongst the natives and pays expenses by cultivation and native trade. The principal crops produced on these estates are chillies and rubber.

*Gowa and Miwawa* are stations of the Baptist Industrial Mission which is conducted upon the same economical system as the Zambesi Industrial Mission. At Gowa chillies, cotton and coffee are grown. Miwawa is a cattle farm, and is not apparently under cultivation. Twenty acres at Gowa are under maize to supply food for labourers.

*Mlanda.* This is the only station of the Dutch Reformed Mission in the district. Wheat is grown here with success.

*Nzama and Utale.* These are stations of the Marist Mission and are devoted almost entirely to religious and educational work.

*Mluma.* Zambesi Industrial Mission. This is a training school for native mission teachers.

*Rivirivi.* An estate of the African Lakes Corporation; 60 acres are under tobacco.

*Dzunje.* An estate of "Blantyre and East Africa, Ltd.": cotton, coffee and rubber are successfully cultivated.

The results of these various agricultural enterprises are encouraging; the local supply of labour is abundant and the soil

and climatic conditions are evidently favourable to successful agricultural development.

*Game.* Game of the more common species is plentiful in most parts of the district. Kudu and sable-antelope are more numerous than in other parts of the Protectorate. Eland abound everywhere, and can be seen in herds of 40 or 50 animals. Pallah antelope are plentiful in the Sanya forest along the Shire. Wild dogs are very much in evidence in the neighbourhood of the river, and often completely drive away the game from a locality, which, however, always returns to its accustomed haunts after the wild dogs have moved elsewhere.

Lions, leopards, hyenas and other carnivora are to be found in most parts.

Game is evidently on the increase, and what is killed by sportsmen and wild animals is more than compensated for by natural increase.

A few elephant appear occasionally in the north-east of the district and also in the neighbourhood of the Bwanje river, but they are merely roving herds and cannot be said to have their permanent habitat in the district. In the rainy season buffalo come down to the Shire from the Chikala sub-district.

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## 8. Zomba.

The Zomba district, situated between Chikala and Upper Shire districts on the north and west, and Blantyre, Mlanje and Portuguese East Africa on the south and east, slopes gradually from the bracing plateaux of Zomba and Malosa (highest point above sea level 6,647 ft.) to the level of the salt Lake Shirwa (about 1,700 ft. above sea level) and is well watered by the streams which flow along this watershed. The granite rock which forms its main structure is easily decomposed, and forms the heavy red soil which gives such a characteristic colour to the roads and clearings of this part of the Shire Highlands. Most of the country is covered with forest which proves fertile when cleared, and supplies plenty of good poles for building and firewood; the best timber trees are only found in the alluvial soil of the river beds.

The native inhabitants, estimated to number 20,000 males and 25,000 females, are mainly Yao of the Mangoche tribe, but there are also many Anyanja, and a large and increasing number of Anguru settlers. They are mainly employed in growing their own food (chiefly maize) and working on European plantations or in producing food supplies for sale.

At the last census there were 90 Europeans (69 males and 30 females) in the district and 174 Asiatics, mostly Indian traders. With few exceptions these reside in Zomba township, a picturesque settlement at the foot of Zomba mountain with a good water supply and electric lighting. Zomba is the headquarters of the Government, and contains the Governor's residence as well as offices of the principal departments. There is a good hospital for Europeans, and one for natives at the Church of Scotland Mission,





*Photo by E. S. England.*

THE OLD RESIDENCY, ZOMBA.





of which the upkeep has now been taken over by the Government. This mission has also a station at Domasi, and many schools scattered about the district. Zomba is well supplied with means of recreation, including a library with reading and billiard rooms, a gymkhana club and grounds, and a golf course. A considerable part of the district is in the hands of private firms interested in the cultivation of tobacco, cotton, sugar, rubber and other products.

Live-stock in the hands of Europeans in the district in 1909:—3 horses, 1,634 cattle, 91 sheep.

The main road from the Lower to the Upper Shire passes through Zomba, and is suitable for wagons. (Zomba to Blantyre 40 miles, to Liwonde 32 miles, to Namadzi 16 miles). Other roads, good for bicycles during the greater part of the year, lead to Mlanje (56 miles) and Lake Shirwa.

A fair quantity of game is to be found within a few hours of Zomba township, including most of the species common in this part of Africa, but sport is poor compared to that in other districts.

The mean temperature for 1907 was 67°, ranging from 93° in November to 42° in August. The total rainfall in 1907 was 62·07 in., as compared with 39·46 in 1906 and 74·13 in 1904, the lowest and highest recorded since 1893.

The Chikala sub-district is bounded as follows, viz. :—On the east by the Anglo-Portuguese boundary; on the north, starting from beacon No. 12 on this boundary, which is on the western shore of Lake Chiuta at the mouth of the Lifani river, it is carried along the Lifani river, up stream, to a point just south of Chiriti hill; thence it is carried in a straight line to Sonje hill, in a south-westerly direction, thence due south for about  $2\frac{1}{2}$  miles; thence due west for  $2\frac{1}{2}$  miles until the Shirwa and Chiuta-Shire watershed is reached; thence along the Shirwa and Chiuta-Shire watershed, southwards to Katundu hill; thence along the Chaoni range to the junction of the Chaoni and Mongorwe ranges; thence along the Likwenu river to the Zomba-Liwonde road; thence along the Zomba-Liwonde road until it is crossed by the Lifani stream; thence along the Lifani stream until it flows into the Domasi river; thence along the Domasi river until it flows into Lake Shirwa.

On the eastern side of the district is Portuguese territory, on the northern and north-western side the South Nyasa district, on the western side the Upper Shire district, and on the southern the Zomba district. The southern and eastern portions are flat, but the western and northern portions are hilly. Chaoni, Chikala, Katundu, Sonji and Munde, are the chief hills.

The most important streams are the Domasi, Lingoni, Chaeyungu and the Sumulu, which flow all the year round. There are other large streams which only run in the wet season, and of these the most important are the Masanje, Lifani, Mikiko and the Mpiri. The district is badly supplied with water in the

dry season from north of the Sumulu stream. From this point to the extreme north end of the district there is no running water in the dry season. Water is then obtained from water holes or from shallow wells, and it is no uncommon thing for a village to have to send some four hours' journey for water from some well in another village. The western boundary, and for a good way inland, is fairly well wooded but the centre and the eastern side is not. The whole of the eastern side is one vast plain.

The tribes inhabiting the district are Achawa, Anyanja and Mpotola. The Achawa occupy the south, central, and the eastern portions. The Anyanja that part of the district near the shores of Lake Shirwa and on the Domasi river, and the Mpotola the north and north-eastern portions. The Mpotola are a section of the Anguru and talk a similar language, but they have intermarried with the Achawa so much that they are practically Achawa, and talk Achawa.

The food crops of the district are of the usual kind. The staple crops are millet and maize, rice is grown in small quantities on the Sumulu, at Chikala, and near the shores of Lake Chiuta, but it is not of a very good quality; sweet potatoes, beans and other small subsidiary crops are also grown. The method of cultivation is crude; the ground is never deeply hoed, and the native plants his seed too closely. The crops are never properly weeded.

Game is very plentiful all over the district except in the extreme southern portion. Elephant exist on the borders of the district and gnu, buffalo, sable, kudu, and most of the smaller antelope usually to be found in this Protectorate.

The roads in the district are as follows:—

From the Lifani stream on the Zomba road to Chiuta, about 65 miles.

From the Ngande stream to the Mikoko stream: This is a branch road off the Chiuta road, and runs in the direction of Mangoche, about 5 miles in length.

All the streams crossed are bridged.

There are six schools distributed throughout the district, controlled by the Church of Scotland Mission.

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## 9. Mlanje.

The district of Mlanje, which includes an area of 1,674 square miles, is bounded on the north by Lake Shirwa and the Zomba district, on the south and east by Portuguese territory, and on the west by the Ruo and Blantyre districts. The most striking feature of the neighbourhood is the Mlanje mountain in the south-eastern corner of the district. This fine hill or range rises very abruptly from the level country, and attains a maximum height of 9,846 feet with a circumferential measurement at the base of nearly 70 miles. The steepest side faces westward; on the eastern or Portuguese flank the ascent is comparatively gradual and the scenery in consequence is much less rugged and imposing

than on the British front where the scarp falls in many places almost sheer to the plains and is set off by several large peaks or buttresses, of which the bare precipice of Chambi (6,289 ft.) is perhaps the most conspicuous. At the northern extremity the range is terminated by the hill (formerly known to the natives as "Mwananyani") on which Fort Lister once stood. A deep gap, used in past years by slave drivers on their way to Quelimane, separates this from the detached cone of Machesa opposite (6,321 ft.), while still further northward the flat country towards Lake Shirwa is studded by a number of isolated peaks, such as Machemba (4,142 ft.), Manze (4,321 ft.), Mpwisi (2,874 ft.), Malambala (3,032 ft.), and others of lesser elevation. A remarkable pyramidal cliff, apparently the remains of a volcanic crater, is prominent to the south-east of Chambi, behind the estate of Lauderdale, near Fort Anderson, and is called by the natives "Manga" (6,460 ft.). Further to the south-east the range ends in the great hill of Manene (8,805 ft.) opposite to which, and separated from it by the River Ruu, stands Machinjiri (5,018 ft.), a detached peak having much the same situation as Machesa has upon the north side.

There are several paths leading to the plateaux of Mlanje; one of these at Fort Lister (northern) end is almost exclusively used for the purpose of transporting timber from the cypress forests which are found on the mountain. Another path, a private one, runs from the Church of Scotland Mission up the Likalulu ravine. A third starts from Fort Anderson, and a fourth from the Thornwood estate. The three last named converge upon what is known as the Lucheny plateau at a height of 6,000 ft. above sea-level.

The Mission path and that from Fort Anderson are exceedingly steep and rough, but comparatively short, so that a good climber can reach the plateau by either route in about 2 or 2½ hours. The Thornwood path is much easier but very much longer. It was made to enable invalids to be carried up to the plateau and for driving cattle to the upland pastures, and the gradient was selected accordingly. The ascent by this route from Fort Anderson would take on foot 10 to 12 hours, and by machila 8 hours.

The physical structure of the mountain is that of a rocky, basal terrace, broken by a succession of gorges, and rising on the British front to an average height of from 5,000 to 6,000 feet; its slopes are copiously wooded in all the stream-valleys, but elsewhere covered only with moss and scrubby bushes, or quite exposed. The summit of this terrace is crowned by undulating grass lands of considerable extent from which again the main peak ascends to a total altitude of nearly 10,000 ft. The headwaters of the Lucheny, Likabula, Tuchila, and other streams divide the grassy downs into several distinct areas, of which the best known is the already mentioned Lucheny plateau. This beautiful upland lies at a height of over 6,000 ft. and stretches

for 5 or 6 miles by 8 or 10 between the deep valleys of the Luchunya and Likabula. It is frequently visited by Europeans, especially by invalids or those who are in need of a change.

The climatic conditions of this plateau are those, absolutely, of the north-temperate zone. The atmosphere is bracing, the water supply pure and abundant and there is ample pasture well suited to the requirements of cattle and all domestic animals.

Mlanje mountain contains the source of every river and stream in the district, with the exception of a few quite insignificant tributary brooks. The Malosa, which forms part of the Anglo-Portuguese boundary, rises on the north-eastern slopes behind Fort Lister and, flowing completely round the eastern flank of the hill, unites, near Thornwood, with the Ruu, which likewise has its source in the Mlanje range.

Among other streams which issue from the mountain, to name only the most considerable, are the Luchunya, Linji, Likabula, Tuchila, Palombe, and Sombani. Besides these a multitude of smaller rivulets take their rise all along the slopes of Mlanje, and during the rains (which are far heavier in this district than in any other) the whole face of the hills in every direction is covered with a perfect network of torrents. Owing to the tremendous impetus with which all this accumulated mass of water dashes down the steep cliffs and precipices, there is always much difficulty in keeping the roads at the foot of the mountain in practicable condition from November to February inclusive. Bridges and drifts are often swept totally away in a few hours, and even the actual soil of the roads suffers considerably from the erosive effect of the continual floods. None of the Mlanje rivers are navigable, even for canoes. The Ruu is much too rough and swift, and the others have not sufficient depth except for a few days in the rainy season. The banks are easily accessible except in the higher courses, where the velocity of the current scours deep, rugged, and narrow valleys.

Mlanje district includes the southern shore of Lake Shirwa, which forms the district boundary on the north for a distance (including curves) of some 22 miles. Up to 2 or 3 miles from land the lake is shallow (not more than 5 ft. at 3 miles) and it probably nowhere attains any great depth, judging from the configuration of the neighbouring country. The water is impregnated with salt and is quite unfit for drinking, but teems with fish and waterfowl, which afford a valuable supply to the natives living in the neighbourhood. There are several islands in Shirwa, including Chisi (the "island") lying off the Zomba shore opposite to the mouth of the Naisi stream; Njalo islet in the embouchure of the Sombani (Mlanje), and several others further north. Chisi is inhabited; Njalo is not; both contain extensive deposits of calcite.

Owing to the flatness of the surrounding country, Shirwa is little subject to storms and could be navigated quite easily and safely provided there was anywhere sufficient depth of water to



float a vessel near the shore, but up to the present no place has been found where such facilities exist. Even native canoes are unable, in most parts, to approach closer than some hundred yards from dry land, while of course any ship or boat of more considerable draught would be checked at a much greater distance by the thick clinging mud and by the incredible masses of aquatic vegetation, especially the sub-aqueous mosses. That portion of the mainland directly opposite Chisi island and known to the natives as Nchenga (the sands) is the only spot on the Shirwa littoral, so far as is known, which is in any sense an exception to the above remarks, for it has been a ferry between the island and the main shore deep enough to admit native canoes drawing right into the beach. But the approaches to this ferry are blocked by extensive reed beds, which elsewhere stretch along the edge of the lake in a continuous line, only partially interrupted at the mouth of the Palombe river and a few other points.

The littoral of Shirwa is inundated for some distance during every wet season, and in many cases is little better than a permanent swamp. The soil is peculiar in its composition and includes the encysted remains of millions of shells which give it a singularly brittle character. Other marshes in the district are those of Lukulezi (on a tributary of the Palombe) and of the Tamanda (the "pools") on the upper Tuchila. Both appear during the rains only. The former would be of no importance but for the fact that a small part of it lies across the Fort Lister-Zomba road. The latter is rather more extensive, and would form a decided obstacle to the construction, otherwise perfectly simple, of a direct highway from Fort Anderson to Zomba.

Probably none of these bogs are impassable in an absolute sense, that is to say they could doubtless be crossed in an emergency even at their worst, but to ordinary traffic they are a serious impediment at times.

The local forests are much the same type as in neighbouring districts, except round the base of Mlanje mountain, for a radius of a few miles in every direction, where the copious rainfall produces a far more striking vegetation than is to be met with in almost any part of the Protectorate. Every valley along the Mlanje range is crowded with enormous timber including such grand trees as the kweranyani, mbawa, ntundu and many other species. Elsewhere the district is covered with thin woods of the usual local type, masuku and mimosa predominate, and presents no obstacle in the way of undergrowth except the common jungle grass. The plateaux of Mlanje, from 3,000 ft. up to 7,000 ft., are the natural habitat of the beautiful and most useful conifer known as the "Mlanje cedar" which is indigenous to this mountain alone.

The only extensive open plain is that which stretches for a distance of 12 to 15 miles between the Sombani and Palombe rivers. This is a dry, treeless expanse of coarse grass, very thinly covered with mimosa bushes. The ground is swampy in the wet



season and trodden to pieces by game and also infested with thorns. One small brook (the Chikaonga) flows through the centre of it.

The district is traversed by an extensive system of roads. The European highways and minor paths (including that to the plateau) cover a total distance of 159 miles, the principal sections being as follows:—

- |                                 |                          |
|---------------------------------|--------------------------|
| (1). Fort Anderson to Lukulezi; | (Fort Lister).           |
| (2). Lukulezi to Namadzi river; | (district boundary).     |
| (3). Fort Anderson to Tuchila;  | (for Blantyre).          |
| (4). Fort Anderson to Tuchila;  | (for Luchenza Rly Stn.). |
| (5). Fort Anderson to Tuchila;  | (for Chiromo).           |
| (6). Fort Anderson to the Ruu;  | (Portuguese boundary).   |
| (7). Mlanje Mission to Tuchila; | (for Blantyre).          |
| (8). Fort Anderson to Tuchila;  | (for Cholo).             |
- besides several short paths.

(1). Is a bad road owing to natural difficulties which cannot be avoided, *e.g.*, the extremely rocky nature of the ground and the great number of streams (17) crossing the line of road. There are 2 wire bridges on this section, one over the Namichira at the entrance to Fort Anderson and another over the Tuchila near Lukulezi. These wire bridges are peculiar to Mlanje, where the heavy floods wash away all crossings which are not raised above the highest water level. The other bridges are constructed of wood in the rough manner usual in this country. Stone drifts are also much used.

(2). A very bad road, impossible to keep in order unless at considerable expense. The soil is porous, grows a heavy crop of weeds and is trodden into a quagmire every wet season by game and by the timber carriers from Lukulezi.

(3). A fair road, easy gradient, free from rocks and with few crossings. There are 2 wire bridges on it, one over the Likabula and another over the Tuchila. It has been to a great extent superseded by Road No. 4.

(4). A good road with easy gradients. There are wire bridges over the Likabula, Tuchila and Luchenza rivers.

(5). A fair road very little used, and therefore only occasionally hoed. It is crossed by 9 streams. There are wire bridges over the Likabula and the Tuchila.

(6). A fair road to Thornwood; thence a path 3 miles to the Ruu. Wire bridge over the Luchenza.

(7). A nice level road, cleared only once a year; it forms part of the old main road to Blantyre before the present deviation was made, and is now used almost exclusively by visitors to the Mission. It is kept in order by the Mission staff with a small annual grant from the Government. One wire bridge over the Likabula.

(8). This road has been superseded by the new road to Luchenza Railway Station, but it is still cleaned annually.

There is no metalling on any of the Mlanje roads. Their width varies from 6 to 10 feet; gradients are quite easy everywhere except on the hill paths.

The ordinary native path only admits of marching in single file; but the people are beginning to appreciate the advantages of keeping the paths properly hoed. When thus cleared a native track is usually 4 to 5 feet wide, instead of about 18 inches. In some cases even the smaller crossways are roughly bridged. It is customary for the natives in Mlanje to hoe the paths on which the Resident is about to travel; this custom is believed to have originated with the Anguru immigrants, who are accustomed to perform this service for officials in Portuguese territory.

There are no native owned cattle in Mlanje, but a large herd (about 450) is kept at the Lukulezi estate (A. L. Bruce trust) and a smaller one (about 50) on that of the Thornwood estate, besides a few on the estates of Lauderdale and Chitakali as well as at the Church of Scotland Mission Station. Pigs and fat-tailed sheep are bred by the natives in limited numbers; goats more extensively. Pigs (full grown) cost from 4/- to 5/- each; sheep 8/- to 10/- each; goats 5/- to 6/-. Milk can only be procured from European cattle owners. Fowls cost 3d. each, and are plentiful; eggs cost 1/- for 30. It is estimated that the annual native crop-yield in Mlanje is as follows:—maize 12,000 tons, millet 3,000 tons, and about 5,000 tons of subsidiary foodstuffs, *e.g.*, beans, pumpkins, cassava, etc.

This represents a good deal more than is actually needed for the food of the native population.

The surplus grain is stored in the *nkokwe* baskets which are to be seen in all villages and is largely used for brewing beer, while a considerable amount is now sold to Europeans. Rice is grown but in small quantities. Except in a few parts Mlanje is very fertile and food is almost always abundant, though prices have risen slightly within recent years.

The native grown cotton crop for the year 1909 exceeded 52 tons, but this industry cannot as yet be regarded as established on a firm basis.

The water supply of the district, derived from its perennial rivers, is everywhere plentiful and is remarkably cold and pure within a mile or two of the base of the mountain in any direction. On the lower plains it should be boiled or filtered for drinking purposes as a safeguard. In the height of the hot weather a few of the streams run dry, but even at such times water can be obtained by digging a few feet in the river bed.

Mlanje is distinguished as being now almost the only district in Nyasaland where any of the old slave-raiding Yao chiefs are alive who fought against the Government in early days. Chikumbo, one of the best known of these, still resides in the Tuchila valley. Three others, Matipwiri, Nyasera and Namwanda, died only a short time ago, and many of their headmen, who were associated with the ancient native regime continue to inhabit

their homes in Mlanje. All these men were accustomed in their youth to the exercise of despotic power and still wield an influence, which though peaceful is far beyond the grasp of any of the younger generation. The consequence is that district administration is made comparatively easy when the confidence of such men is secured. The enormous influx of Anguru from Portuguese territory has been a prominent factor for several years past in adding to the labour supply, which is now very considerable.

Generally speaking the natives are peaceable and well disposed. There are practically no licensed firearms in the hands of the natives; such as exist are usually old flintlocks brought from over the Portuguese border. These are few in number and nearly useless as lethal weapons.

Mlanje is the only district where the cultivation of tea can be carried on successfully, and the quality is improving annually. Tobacco, rubber, cotton, fibre and chillies are also grown, with satisfactory results.

## 10. Blantyre.

The hills around Blantyre and the Midima range are the principal hills in the broken plateau which forms the bulk of the Blantyre district, and slopes down towards the Tuchila plain on the one hand and the Shire valley on the other. Streams drain down either into the Shire river, which runs round the district from the north to the south-west, or into the Namadzi (north-eastern boundary of the district) which empties itself into Lake Shirwa, or the Tuchila, which rises in Mlanje Mt., forms the south-eastern boundary of the district, and runs into the Ruo. To the north is a flat plain broken by occasional hills bordering the Shire river. It lies about 1,500 ft. lower than the average level of the rest of the district.

Through the 60 miles of the Murchison cataracts, the Shire runs between broken limestone hills, in contrast to the flat alluvial plains which border it elsewhere.

*Chiradzulu* the highest mountain in the district (5,633 ft.) lies from 13 to 15 miles north of Blantyre, about 2 miles from the Blantyre-Zomba old road; it is a long knife-like ridge of about 3 miles, running from S.-S.-W. to N.-N.-E.

*Ndirande*. Three miles from Blantyre to the north-east, consists of a small plateau to the south and a bare rocky ridge to the north, the plateau being about 4,000 ft. and the ridge 1,304 ft. higher. It is about  $1\frac{1}{2}$  miles long and half-a-mile wide.

*Michiru* at its nearest point is less than 3 miles north-west of Blantyre, and is a well wooded mass of land with many points nearly 5,000 ft. high. Its top is a small plateau, covered with dense forest.

Two miles from Blantyre, to the north, is *Nyambadwe* a small conical hill of 4,028 ft.

To the east of Blantyre, Zedi, Pingwi, Bangwi, Malabvi, the Midima and Soni hills form an almost continuous range, stretch-

ing from 4 to 15 miles from Blantyre; their slopes are all bare of heavy timber, but there are patches of forest on the tops of Bangwi and Malabvi. Bush grass grows freely on the slopes, but the tops are frequently of bare precipitous rocks. To the south, 25 miles distant, is Cholo mountain, a large well wooded hill of the same type as Michiru.

There are no navigable rivers in the district. The left bank of the Shire forms the district boundary for a short distance. The principal streams are:—The Tuchila and its tributaries, the Lucheny, Nswadzi, the Likabula, and its tributaries, the Mudi, Naperi, Namadzi and their numerous small tributaries; but only the above mentioned carry water on the surface all the year. From many apparently dry streams water can be obtained by digging in the beds. In the wet and cold weather the water in these streams is excellent for drinking. The banks are usually high and heavily wooded.

On the Mlanje road there is a wire foot-bridge over the Tuchila, and the Mudi is bridged in three places near Blantyre.

Drifts have been made over all the streams on the principal roads, but these are usually carried away directly the heavy rains begin.

There is no heavy forest in the district, except the small patches on the hills mentioned above and near streams. The country, however, is lightly wooded everywhere except where natives have made their gardens within the last 5 years.

In the wet and cold weather the country is covered by a coarse grass, varying from 4 to 8 ft. in height, which is fired about August, and makes no great growth again till well on in December.

The Mvu marsh, in the northern part of the district, is crossed by the Blantyre-Matope road; it is muddy for wheeled traffic in the wet weather, but from August to the breaking of the rains the "marsh" is a dry plain with one or two water-holes, notably the Mvu hole which lies a few miles from the road about 7 miles from Matope, and contains water throughout the year.

The area of the district is 1,635 square miles; the population has increased largely in the last 3 years, and now numbers about 45,000 males and 52,500 females.

The Yaos are the most warlike of the local tribes; at present they are a quiet and law abiding people, and unless the rapid strides that Mahommedanism is making among them contains the germ of a very distant danger they are not likely to depart from their present peaceful and agricultural mode of life.

The Anguru (including some Alolo) are numerically the second tribe of the district; on the Portuguese occupying their country they crossed to British territory. Their principal characteristics then appeared to be timidity and a tendency to thieving. They have settled down with surprising rapidity and, though they more often learn the Chinyanja language than the



Yao, they imitate the Yao very closely in the merging of tribal distinctions, which is one of the most noticeable of native tendencies: they will doubtless approximate more and more to the Yao standard. Conversions to the elementary Mahommedanism, prevalent among the Yao population, are increasing among the Anguru and their old timidity and dishonesty are disappearing amongst the older settlers.

The Manganja (including the Achikunda and Ambu) have always been an unwarlike people. Under settled government they differ from the Yao, principally in their lack of enterprise.

The few so called Angoni settled in the Blantyre district are freed slaves of mixed races, and resemble the Manganja except that they show somewhat greater industry. Bvumbwe of Mpezo is the only chief of undoubted Angoni extraction who now lives in the district.

The influence of the chiefs has been declining since the advent of the British Government. Four headmen attend court alternately for a week to sit as assessors.

The bulk of the population lies on the rolling plain between Chiradzulu and the Midima hills, and scattered along the principal streams. Except that the Manganja predominate in the district of Cholo no locality is peculiar to any one tribe.

Transport is by ox-wagons and carts along the main roads, but by far the greater portion is done by carriers.

The climate has, so far, proved unsuitable for horses; there are, however, a few in Blantyre at present.

Carriers are usually paid by the trip, the rate is roughly 1/- for 50 miles, which can, under pressure, be done in 2 days or less.

Loads should not weigh more than 56lbs.

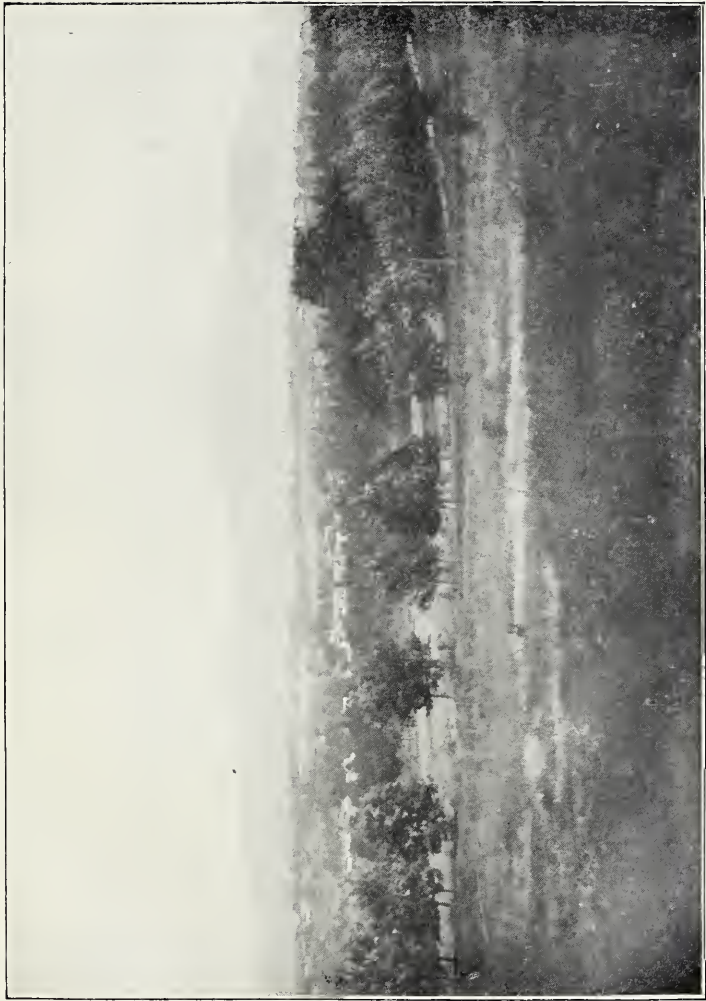
In an exceptionally dry season it would be necessary to carry water and food for draught animals, but ordinarily it is obtainable along any route. Indian corn and salt cost about 3d. per day per animal.

*Roads.* Blantyre to Zomba, 42 miles. There is a rest-house of the African Lakes Corporation at Namadzi, 25 miles from Blantyre, where bedsteads and provisions are obtainable, also good water supply for carriers. The road is used for ox-wagons, mule carts and other vehicular traffic. The Namadzi and Namiwaya streams are crossed by iron and timber bridges capable of carrying a gross load of  $1\frac{1}{2}$  tons on each wheel.

Blantyre to Cholo, 39 miles. There is a rest-house of the British Central Africa Co. at Mpezo about 16 miles from Blantyre where beds and provisions can be obtained, also good water supply for carriers. No large streams encountered.

Blantyre to Matope, 33 miles. There is a rest-house of the African Lakes Corporation at Lirangwe, 22 miles from Blantyre, where beds and provisions can be obtained, also good water supply for carriers. The Lunzu and Lirangwe are crossed by drifts; the road is used by carts in the dry weather, but the





BLANTYRE TOWNSHIP.



7 miles across the Mvu marsh are only practicable for foot traffic in the rains.

Blantyre to Neno, 42 miles. There is a Government rest-house near the Shire river, 26 miles from Blantyre. No beds or provisions; mosquitos numerous.

Blantyre to Katunga, 28 miles. There is a rest-house of the African Lakes Corporation at Mbame about 14 miles from Blantyre where provisions are provided but not sleeping accommodation. Water supply for carriers. The road is continually used by wagons, carts, &c.

Blantyre to Mlanje. By train to Luchenza station, and machila to Fort Anderson— $3\frac{1}{2}$  to 4 hours in machila.

The railway line from Blantyre to Port Herald is open for traffic.

A large native market is held daily at Blantyre for the sale of native produce and stock.

Crops grown to supply workers on estates: maize, beans, &c., 900 acres under cultivation.

The European population of the district numbers 171 males, 76 females; there are also 190 Asiatics, chiefly Indians.

## 11. West Shire.

The northern boundary starts on the Shire river at latitude  $15^{\circ} 27'$ , from which point a straight line is drawn in a north-westerly direction till it meets the Lisungwe stream and then proceeds up that stream to a point where the Mwendang'ombe stream flows into it; proceeds up the right bank of the Mwendang'ombe stream till the Fimfuli stream joins it, and then up the right bank of the Fimfuli stream to beacon No. 27 on the Anglo-Portuguese boundary. The southern boundary starts from beacon No. 43 of the Anglo-Portuguese boundary (Valeta hill) and follows a straight line to a point on the Mkombedzi-wa-fodia (or Chimbia) stream 2 miles from the junction of the said stream with the Shire river; thence it follows a line parallel to the right bank of the Shire river and 2 miles from that river up stream till it strikes the Mwanza stream and thence down the Mwanza stream to its junction with the Shire river. The eastern boundary starts from and follows the Maperera stream up the right bank till it reaches the Katunga hills, which are followed till they come down close to the Shire river about latitude  $15^{\circ} 44'$ ; then it follows up the right bank of the Shire river till it comes to the starting point of the northern boundary at latitude  $15^{\circ} 27'$ . The western boundary starts at beacon No. 43 on the Anglo-Portuguese boundary, and follows up that boundary till it reaches the northern boundary at beacon No. 27.

The area of the West Shire district is about 2,400 square miles. The headquarters are situated at Neno in the northern part of the district. In the Chikwawa district, *i.e.*, the southern part, the country is very flat and covered in most places, excepting where there are villages, with thick bush. It is drained by

the Shire and Mwanza rivers, also by smaller streams which flow into them.

Coal has been found about 22 miles west of Chikwawa at a place called Sumbu; in 1906 a prospector bored for petroleum and has since put down a plant for the extraction of the oil. The sub-soil in the Chikwawa district is of a sandy nature.

The shade temperature on the river during the hot season, which lasts from October to the end of December, is often over 105° F. at 2 p.m., but in the cool months, *i.e.*, May, June and July, the average shade temperature at mid-day is from 83° F. to 86° F. At Neno the maximum temperature only reaches 97°, the minimum in the cold season being as low as 49° or 50°.

In the northern district the country is rocky and mountainous, divided into three different ledges or ridges; starting from the Shire river at the Government ferry on the Neno-Blantyre road the country is low and well wooded for about 9 miles, and is drained by the Shire and the Lisungwe rivers; a very thick jungle is encountered near the Lisungwe river, where lion and buffalo are found. The country rises from this plain to an elevation of about 2,500 to 3,000 ft. above sea level with a plateau from 10 to 12 miles across, running north and south. The headquarters of the district is situated on this plateau, which is drained by the Lisungwe and Wankurumadzi rivers; the latter rising near to Manguo about 6 to 8 miles from the northern boundary and flowing into the Shire river about 20 miles above Chikwawa. A good limestone is procurable in this locality; iron is also found.

About 2 miles to the west of the plateau on the Kirk range is the Anglo-Portuguese boundary. The natives in the Neno district are mostly Angoni but there are some Ambo; the former live on the Neno plateau and round about the Lisungwe, and the latter on the Kirk range. They are fairly willing workers and are generally employed on plantations. The temperature is seldom very high, and the climate cool and bracing.

There are 2 mountain ranges in the district, *viz.*, the Katunga hills on the east, and the Kirk range on the west and north. The Katunga hills are situated about 2½ miles to the east of Chikwawa, and run from the southern boundary at the Maperera stream in a northerly direction till they come close to the Shire river about 25 miles north of Chikwawa; their height is about 1,000 ft. and the soil of a loamy nature; the sides of the hills are well wooded but are not under cultivation. The Kirk range extends all along the western boundary, at a height of about 3,000 ft., but in some places the peaks rise to over 5,000 ft., *e.g.*, Dzampa and Manjeti. The plateau near Neno is well wooded but not very well watered, the ground is very broken and the soil sandy.

There are 4 large rivers in the district—the Shire, Lisungwe, Wankurumadzi and the Mwanza; of these the Shire alone is

navigable for steamers and barges from the southern boundary as far as Chikwawa; but it is possible in the wet season to go another 5 miles or so above Chikwawa, when the falls impede further progress. In exceptionally bad seasons the river from the southern boundary up stream is even unnavigable. Generally only the smaller steamers come up to Katunga; in 1898, however, steamers came as far as Chikwawa, but of late years they have only with difficulty got as far as Katunga. There is very little current in the Shire in the dry season, but during the rains, when the river is in flood, it runs probably at a rate of from 4 to 6 miles an hour.

Cotton is cultivated at Chikwawa; Neno planters cultivate coffee, tobacco, cotton; rubber and fibre have lately been planted.

As regards game, most of the species common to the Protectorate are found.

The tribes chiefly consist of Mang'anja, Angoni and Ambo although there are a few Chikunda living at Chikwawa; a number of Makanga have lately come from Portuguese territory and settled near to Dzobwe about 20 miles from Neno. The Mang'anja reside in the Chikwawa district, although a few are scattered about near Neno; they are indolent and lazy, not doing more work than is necessary, and very few work for Europeans after paying their taxes. They are fond of hunting, and are of fair physique.

The Angoni live near Neno and are good workers; they are fond of hunting, of good physique, and make good herdsmen.

The Ambo are a hill race living chiefly on the top and slopes of the Kirk range; they are a hardy warlike people and make good carriers.

Maize, millet, pumpkins, and cucumbers constitute the native diet. The only method of cultivation practised is by the hoe, and burning of rubbish on the land to be planted. No manure is used although obtainable. The district is a bad one for native grown foodstuffs, but could be improved with cultivation.

The native population for the year 1908-9 is approximately as follows:—

5,328 men, 6,329 women, 6,257 children; Total 17,914.

Native owned stock taken from the census for the year 1908-9 is as follows:—152 cattle, 1,547 sheep, 6,238 goats, 2,510 pigs. The price of cattle is from £4 to £5, sheep from 6/- to 8/-, goats from 3/- to 6/-, fowls from 4 to 5 for a 1/-, eggs 3 for 1d.

In the Chikwawa district, close to the river, pasturage is good, but at Neno stock suffers during the hot season as food is very scarce.

The rainfall at Chikwawa averages about 35 inches per annum, and at Neno 39½ inches. In the last few years there has been a drought generally in January which has scorched the growing crops. The country is fairly well supplied with water with the exception of about 24 miles between Chief Mlauli's



village and the Wankurumadzi stream on the Neno-Chikwawa road, where the only water is at a small spring near to a dry stream about 6 miles from Mlauli's village, named "Kuppo."

There are about 12 miles of main roads in the Chikwawa district having a uniform width of 22 ft. There are 204 miles of hoed tracks about 12 ft. wide which are periodically cleaned by the native chiefs, who are each given a certain section to keep clean. The distance from the Neno Residency to Chikwawa is approximately 62 miles, and from the Neno Residency to Blantyre about 42 miles. Two rest-houses have been built, one at the Shire-Ferry on the Neno-Blantyre road crossing, and the other on the Kirk range at Tambo; the latter is at an altitude of about 5,000 ft., and useful as a sanatorium. Cycles can only be used on the main roads in the Chikwawa district.

A road from Neno to Chikwawa was constructed in 1908 (75 miles) via Dzobwe and Mikorongo (Chief William's Village).

Transport from Chikwawa is done by carriers and ox-wagons; from Neno carriers only are used, but with an improved road from the river, wagons could be employed.

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## 12. Ruo.

The Ruo district is about 1,772 square miles in extent, and is wholly situated within the basin of the Shire river. It is bounded on the south-east by the Ruo river which forms the Portuguese boundary; on the west by the Portuguese *prazo* Goma, the division being the watershed forming the Anglo-Portuguese provisional boundary; and on the north and east by the West Shire, Blantyre and Mlanje districts. The district is drained by short streams which rise in the ranges to the east and west which, after in most cases losing themselves in the Elephant marsh and Mbengo marsh, ultimately find their way to the Shire, also by the Ruo river and its numerous tributaries.

There are extensive alluvial plains lying on both sides of the Shire between that river and the parallel hill ranges. These plains do not vary in altitude to any extent, but in width they range from 4 to 20 miles between the river and the hill ranges, the variation being due to the winding nature of the river.

The district is practically enclosed by three distinct hill-ranges running parallel to the Shire. On the east side is the Cholo range which forms the western edge of the Shire Highlands plateau, and which culminates at its northern end in Mt. Cholo with an altitude of 4,400 ft. The average altitude of the plateau is from 2,000 to 3,000 ft. above the sea level. The range on its western face is of a precipitous nature, but eastwards it falls with a gentle undulating slope to the Nswadzi and Tuchila rivers. The Cholo range is generally well wooded except where the ground has been cultivated by natives or Europeans: the trees on this range and generally over the Shire Highlands rarely exceed 18 inches in diameter, their growth being hampered by grass fires

and overcrowding. In common with the rest of the country the Cholo range is also covered with a dense growth of reedy grass which, towards the end of the wet season, attains a height of from 4 ft. to 8 ft.

On the west of the Shire there are two hill ranges, the Matunda range to the south and the Marangwe range to the north. The former runs in a northerly direction, and is a continuation of the Port Herald (Lower Shire) range. It is about 15 miles in length. The Marangwe range commences about 15 miles north of the Matunda range, and also runs north and south. Both these ranges rise with a gentle slope and are more or less flat topped. They have a scanty covering of soil but are clothed with scrubby forests, the Marangwe in particular being covered with thorn trees and prickly vines which are almost impenetrable.

About 50 miles of the Shire river are within the Ruo district, which it practically bisects. The navigability of the Shire depends so much on the rainfall in the Lake Nyasa basin that it is difficult to lay down precisely what its state from that point of view is at any time of year. In a year having a normal rainfall the river is navigable right through the district for vessels of light draught for 9 or 10 months out of the 12, while in a year of drought it is not navigable for more than 2 or 3 months. The depth varies in the same way. The river may change in a few months from being a series of pools averaging only a few inches in depth, with no current (as in 1903), to a depth of 10 ft. with a 3-knot current (February 1904) or even more. It may, however, be laid down as a general rule that the Shire is navigable throughout the district from the middle of December to the end of April, and usually for longer as far as Chiromo. Owing to the steady fall in the level of Lake Nyasa the Shire averages in depth much lower than it did 10 years ago and every year depends more and more on the water brought from the hills by the Ruo and the minor streams from Cholo, Blantyre and Zomba districts. In exceptionally wet seasons the river floods its banks and the Elephant marsh becomes a swamp with numerous lakes and pools instead of the almost entirely dry plain which it is in the dry weather. The banks of the Shire are flat and open, but are covered with high reeds except where these have been cleared to make room for native villages or gardens. The banks are not thickly forested anywhere in the district.

The next river in importance is the Ruo, which is the largest tributary of the Shire: it rises in the southern part of Mlanje and receives by far the greater part of the drainage of this mountain range. The Ruo forms the boundary of the district (and also the Anglo-Portuguese boundary) for a distance of 32 miles, following a south-westerly course till it joins the Shire at Chiromo; it is navigable in the rainy season to a point some 8 miles above Chiromo. Above that point it is rocky and

much broken by rapids, and at Zoa, 25 miles above Chiromo, the river falls over a precipice about 180 feet in height. The Ruu has a swift current except for the last 8 miles of its course: its average width throughout its navigable reach, which varies in depth as does the Shire, is some 300 feet. Except for these last 8 miles it runs between steep and sometimes precipitous banks, the southern end of the Cholo range falling abruptly to the river: these banks are heavily wooded with fine trees and thick undergrowth.

Of the tributaries which join the Ruu the most important is the Tuchila, which forms the boundary between the Ruu and Mlanje districts for the last 5 miles of its course. Five miles from its mouth it is joined by the Nswadzi, a mountain stream which, rising in Cholo mountain, brings a considerable volume of water to the Tuchila throughout the year: the Nswadzi forms the boundary between the Ruu and Blantyre districts throughout its course of some 25 miles, and receives the water of various small tributaries, including (from the west) the Natanda, Nandolo and Namanjasi. Other tributaries of the Ruu are the Zimbili and Chinyenyedi, the Limbi running in at Zoa, and the Tekelani and Lifuluni.

Of the tributaries of the Shire there are only two in the district which throughout the year carry water over their whole length from the hills—the Maperera and Nkate, two short streams rising in Cholo mountain; the Maperera forms the northern boundary of the district east of the Shire. All the other streams which flow westward from the Cholo range lose themselves in the Elephant marsh and all but the Limpangwi, Levunzu, Chidzimbe, Masenjere and Tangasi are dry on the surface within 2 miles of the foot of the hills as early in the year as July.

In the western district there is not one stream in which there is running water in the dry weather. The Mwanza and Tangasi are traceable as dry sandy nullahs from the hills to the river: the numerous other streams which rise in the western hills carry no surface water in the dry weather, though water can be obtained by digging in the sandy beds of most of them: they lose themselves in the Mbengo plain, which in the rains becomes a swamp draining itself into the Shire through reed grown channels such as the Chimbila, Nadzombe, Nkwete and Nami-kungulu. Similarly the Cherobondo drains the swamp west of Pokera.

The nearest huts of Mtaya village are only separated by the Dzembe from the township of Chiromo, and they stretch along the Shire bank northwards to the Fera, a distance of a mile or more. The Dzembe and Fera are two swampy streams which drain the south end of the Elephant marsh. The Fera, for some distance from its mouth, is traceable running almost parallel with the Shire, and Mkwazi's village of 4 huts is between the Shire bank and the Fera some 2 miles from the latter's

mouth. From here to Gumbari and Masangosa north of the present limits of the Game Reserve there are no villages and no path has been made along the east bank of the Shire. By water or by the west bank path Gumbari and Masangosa are about 26 miles distant from Chiromo. Masangosa's village, at Utebi in the middle of the great borassus palm forest, which is commonly spoken of as Masangosa, makes a pleasant camping ground in reach of good shooting. Following the east bank northwards, after a march of some 10 miles through a number of villages of which Mlambi is the largest, Ngwengwe, Makwira's village, is reached. Here the plain lying between the Shire and the hills, has narrowed to a width of some 4 miles, and the road is within easy reach of the riverside villages. Following the winding riverside path for 8 miles, the mouth of the Nkate stream with Monaya's village, and the British Central Africa Co.'s dynamite store, is reached; the Maperera (district boundary) is 12 miles from Makwira's. These two streams find their way to the river and both bring a fair body of water through their brief course from the hills: the other streams in this locality all lose themselves in the Darbanya dambo, as those rising in the western hills do in the Mbengo marsh.

The Maperera stream is the boundary between Mr. Ascroft's cotton plantation and that of the British Central Africa Co., the latter lying outside the Ruo district; on the Nkate stream is Mr. Fiddes' plantation. Maperera is by road  $40\frac{1}{2}$  miles from Chiromo and 32 miles from Blantyre, Nkate 36: the Limpangwi crosses the road about a mile from the Nkate and at 31 miles from Chiromo is the Levunzu, with good water all the year round and a number of villages: the next village is Mlonjo on the Malunga and at 27 miles the Para is crossed three-quarters of a mile from where it leaves the hills crossing the Cholo road at the foot of Tumbulende hill. From Nkate to this point the road though level is rather spoilt for cycling by lack of traffic: the grass grows over the never very marked, footworn path in the middle of the road, and when it is hoed away leaves a rather rough broken surface: on turning into the Cholo road the improvement is very marked: at about 24 miles from Chiromo the Mkasi is crossed, and directly afterwards the Chidzimbe, which drains Mitondo hill; there is water here for all but 2 or 3 months of the year: 5 miles nearer Chiromo is the Masenjere stream where there are two villages and a mailmen's resthouse. This is a good halting place: the water is excellent, Masenjere is outside the Game Reserve and there is good shooting near by.  $7\frac{1}{2}$  miles of good road (the Mankwala and Tengamanga, 2 deep dry stream-beds are both now negotiable by a bicycle) separate Masenjere from Muona, another favourite halting place for carriers; here there is good water all the year round in the Tangasi. Muona is 11 miles from Chiromo, 3 miles of which are across one of the main arms of the Darbanya dambo and make very bad riding.



The plains of the Ruo district are formed of various strata of decomposed rock, varying from a few inches to some feet in thickness, while mica and micaceous silt is impregnated with the various alluvial strata: in places the alluvial soil is destitute of stratification.

The geographical construction of the hill ranges may be described generally as being perfect, all ranges and spurs run east and west with hardly any exception. On the north-east face of the range (Cholo) lying to the east of the district large sheets of basaltic rock are to be seen, and in the beds of the streams cracks or splits may be noted in these basaltic rocks filled with various mineral rock, the rock system being igneous. The south-east side of the range is metamorphic and is composed of clay, slate gneiss, schists, serpentine, &c. This range is well watered and is covered generally with a deep deposit of soil, chiefly of a red clayey nature, but many varieties are to be met with varying from dark loam to light sandy soil. Iron deposits are common. On the western boundary of the district the hill range lying to the south is metamorphic, the various hill tops, spurs and ridges being capped with basalt, which is much weather worn. Round boulders, small and large, are met with. Both metallic and hematite iron is found at the north-east base of the hill, and is still being smelted by natives and used for making spears, knives and hoes. This range has been proved to be auriferous and to bear various other minerals, but not in paying quantities. The range lying to the north on the same side of the district is carboniferous. These ranges are scantily covered with soil.

Chiromo is the chief port of entry of the Protectorate and is the headquarters of the Customs department, presided over by the Comptroller of Customs, 3 European Assistants and native staff.

The Portuguese station named Chiromo stands opposite the British township across the Ruo river.

Up to 1907 Chiromo was the headquarters of the Shire Highlands Railway, with consequent activity in trade during the time the line from Port Herald was constructed and with the commencement of the line to Blantyre. With the removal of the railway headquarters to Limbe trade generally has slackened to more or less its normal state. There are some 20 to 30 Indian stores which vie with each other in obtaining the native trade. The European stores are represented by Kubula Stores, L. Deuss & Co., and the African Lakes Corporation with also a branch Bank.

There is a local market near the police lines just out of the town, where native produce can be purchased at reasonable prices. This is a boon to native servants, most of whom come from other districts.

The European population of Chiromo is now reduced to from 10 to 12 permanent residents.

The usual native crops are grown such as maize, millet, kaffir corn, potatoes, beans, pumpkins, etc., but usually only sufficient is grown to last until the next crop is ready, with very little to spare beyond the seed required for the following planting season; thus the native makes absolutely no provision for famine or unexpected contingencies.

The experiments in cotton growing by natives so far have proved a failure. Another attempt is being made to put this industry on a satisfactory footing, and it is expected that the experiment will meet with success. Very little rice is cultivated considering the general suitability of a large area of the district.

The district abounds with palm trees, well known for the wine they give (which makes an excellent substitute for hops for bread). In the old days the destruction of these trees by continual tapping was considerable, but they are now rigorously protected and tapping prohibited.

The rainfall is about the lowest in the Protectorate, 25 to 28 inches being about the average. Like all other districts the rainy season commences about the end of November and lasts until April, the heaviest fall being in January.

Excellent bird shooting is to be had both on the Ruo and Shire rivers—teal, snipe, various duck, geese, &c., are to be found. There are also numbers of pelican, egrets, storks, various herons, &c., indigenous to the river.

The district has an abundance of game, almost every species is to be found from elephant to duiker, including, of course, buffalo for which the Elephant marsh is famed and which are strictly preserved. Their preservation has made them a danger since they do not now fear native, European or rifle. The largest herd is about 400 strong, and can often be seen on the plain drawn up like a cavalry regiment.

The distribution of tsetse fly in this district is a subject on which there is at present very little reliable information. A Government Medical Officer in 1906 found *G. fusca* at Masenjere on the Chiromo-Cholo road, but later in the same year he failed to find a single specimen during a fortnight's travelling in the Ruo and West Shire districts. The presence of fly at Masenjere is further testified to by the fact that several bullocks kept there in 1905 to test this question all died, and the fly microbe was found in their blood. There seems to be reason also to suspect the presence of fly elsewhere in the plains, and especially nearer Chiromo, as Government cattle which had been years in Chiromo died early in 1905 and the tsetse microbe was found in their blood, as also in the blood of a buffalo killed for scientific purposes within 3 miles of Chiromo. As a rule, however, cattle thrive at Chiromo.

There are only 113 native owned cattle as well as some 3,000 sheep and goats in the district.

The native population, according to the latest statistics, is 17,526—6,400 being male adults.

### 13. Lower Shire.

Commencing at a beacon on the right bank of the Shire River, at Mzimu (Marka), the boundary is carried due west  $13\frac{1}{2}$  miles; thence it is carried in a N.-N.-W. direction for a distance of approximately  $1\frac{1}{2}$  miles to the Zambesi-Shire watershed; thence it is carried along this Zambesi-Shire watershed in a northerly direction through the Kafalantengo hills, Kafuta hill, Mwanambidzi hill, Mlaka hill, Mlanga hill and Chirunda hill to a point 1 mile (about) north-west of this Chirunda hill which is in latitude  $16^{\circ} 41'$  south (the distance the boundary is carried along this watershed, measuring along the sinuosities, is approximately 46 miles); thence it is carried along this latitude  $16^{\circ} 41'$  east for a distance of approximately 23 miles to the right bank of the Shire river (this point is about Ntonda village at Nyamatute river); thence down the Shire river in the centre of the navigable channel to the point of commencement.

Malawe hills rise from the plains about  $2\frac{1}{2}$  miles to the east of Port Herald, the highest point (3,190 ft.) being about 6 miles from Port Herald; the range lies in a direction west by south from  $10^{\circ}$  to  $30^{\circ}$  and the height is from 2,600 to 3,190 ft.; the eastern front of the hills is very abrupt, and is heavily timbered with small trees; in the gullies mbila and mbawa trees are plentiful. The sides to the north and west fall abruptly 500 to 800 feet when a broken plateau of from 1,800 to 2,500 feet extends to the north for about 10 miles and to the west for about 5 miles, the highest hills in this plateau being Mwanambidzi and Mlaka.

Lulwe hills are situated on the south-western corner of the district, and rise to a height of 2,588 feet; the peak is in British territory but the plateau, about 1,600 feet, extends several miles into Portuguese territory to the south and west.

Mwanambere hill, south-west of Malawe, is about 2,500 ft., and is well timbered on the eastern side with mahogany.

Mbungwe hill, Kafuta hill, Matope hill and Kafalantengo hill to the south of Mwanambere run due east and west, height 2,500 to 2,700 ft. Mbila and mahogany trees are plentiful.

Mpofu hill, about 18 miles north-west of Malawe, is about 1,500 ft. and Chirunda 1,311 ft. Nyantoko 1,194 ft. and Mlanga complete the most prominent hills.

Unless hills are landmarks they are not named by the natives; the names of the smaller hills are only known by natives living within a few miles of them.

The hills consist mainly of gneiss, composed of alternating folia of quartz, felspar, hornblende or biotite, together with occasionally garnet and graphite. In the gneisses there are several beds of crystalline limestone, which in places swell out to a considerable thickness. These gneisses have been formed by metamorphic action on a series of beds which were originally of sedimentary origin.

Associated with these original rocks were basic intrusions of igneous rocks which are now converted into amphibolites. In a few places in the district there may still be seen small patches of the original unaltered shaly sedimentary beds which have escaped the metamorphosing action that transformed the other beds into gneisses. During the metamorphosing processes the folia of the gneiss were interlaminated with pegmatic veins, some of which may be termed aplites. They consist mainly of quartz and also contain crystals of plagioclase, a mineral which contains a certain percentage of lime. The decomposition by weathering of such a bed gives rise to a limey looking outcrop which has been burnt for lime without success. At some time, probably towards the close of the metamorphosing action, granite was intruded into and among the gneisses, and owing to its greater hardness and resistance to weathering agencies it now forms the summits of many of the most prominent peaks in the southern district.

There is a deposit of limestone in the hills in the western portion of the district, which is being quarried for building purposes at Lulwe and at Mkuche's, to the north of Malawe hill.

Long ages subsequent to the earth's movements caused the conversion of the original sedimentary beds into the gneisses now visible; subsequent to the appearance of the pegmatitic veins and the granite another set of earth's movements commenced accompanied by volcanic action. This action is evidenced to-day by the presence of numerous dykes of a dense black basalt cutting through the gneiss in various directions and filling up what were once fissures in the gneisses and other allied rocks. The basalt often exhibits columnar structure the columns stretching across from wall to wall of the dyke. The basalt is very fine grained as a rule, and seldom contains crystals which may not be seen by the naked eye. A good instance is to be seen at the waterfall of Nyamadzere river close to the Residency.

The western half of the district is a plateau varying in height from 1,000 to 2,000 feet from which all the hills previously mentioned rise; the plateau is really a series of small hills and is covered with timber principally mbila (a very hard dark timber used for boat making by Europeans and Indians). Mahogany is found in stream beds.

The eastern half is a plain of from  $2\frac{1}{2}$  to 7 miles wide, is heavily timbered with the exception of the Ndindi marsh and the places cleared for native gardens; a number of the largest trees are never felled in the gardens.

The Shire river is the eastern boundary of the district; its width varies from 40 yds. between high banks to 70 yds. in low lying country; the depth between high banks in the dry season is from 6 to 12 ft., and in low country 6 ins. to 2 ft. The rise in the river depends on the rainfall and sometimes reaches 20 ft.: there is also a rise at times due to the Zambesi being in flood earlier than the Shire, thus banking up the water. At low water



the current is about 2 miles an hour, and increases as water rises till when the river is in flood steamers come up stream as near the edge of the flood as possible in order to make headway. The first floods are at the end of December, and continue till April. The banks are high in straight reaches of the river and where the river bends to the east; wherever the river bends to the west the banks are low and swampy. South of Port Herald the nearest timber on British side is distant about 5 to 7 miles; above Port Herald the timber in many places reaches the river bank. South of Port Herald the approaches to the river are through the Ndindi marsh; along the river bank there is a narrow strip of higher ground cut up by natural ditches which drain the marsh as the river falls. In the river there are several islands which are used as potato patches by natives living on the banks separated by the shallow channel; as these are under water during the wet season no huts are built, the owners of the gardens living on the mainland. During the past few years there has been difficulty in the navigation of the river from May till December, caused by the fall in Lake Nyasa.

The Tengasi river rises in Mlaka hills and flows north entering the Shire river above Chiromo, the principal tributaries being Dzenji, Kasuka, Mwabvi and Dandi rivers draining the range of hills from Mlaka hill to Chirunda hill, and the Mwanantu, Mapofu, Masamva, and Matope rivers draining the range Mlaka hill to Mpofu hill. There is water in the Tengasi river from December till July; from July to December it can be obtained from all these rivers by digging.

The Nyamatute river drains the eastern slope of the Mapofu hills and flows into the Shire river at Ntondo village about 21 miles from Port Herald. It carries no water except during the rains.

The Nyamyala river drains the eastern slope of Mlaka hills and part of the Juepe hills, and flows into the Shire at Tengani village about 14 miles from Port Herald; the Khandi river is a tributary of the Nyamyala river, and joins it about 1 mile from the Shire. There are several pools of water, well known to natives, to be found all the year. The Nyamyala crosses the railway at 15 miles and the Nkandi at 14 miles from Port Herald.

The Panga river drains the east and south of the Juepe hills and the north of the Mwanambidzi hills, and flows into the Shire at 7 miles from Port Herald crossing the railway at  $7\frac{1}{2}$  miles. Water is found all the year in the Juepe hills, but further down is only to be found during the rains.

The Nyamazere river with its tributary Nyakamwa drains the northern and western slopes of the Malawe hills and the southern slope of the Mwanambidzi hills, and flows past the Residency into the Ndindi marsh, forming a boundary between chiefs Mbango and Chipwembwe country. This is a running stream all the year round.

The Ngoni and Chimara streams drain the eastern slope of Malawe hills, and have water in the rainy season only. They flow into Ndindi marsh.

The Malindi river drains the southern and south-western slopes of Malawe hills and the northern slopes of Mwanambere hills, and flows into Ndindi marsh; it is the boundary between Chiefs Mbango and Ngabu country. It carries water all the year.

The Nyachipere river drains the Mwanambere hills, Mbungwi hills, Kafuta hills and Kafalentengo hills on their northern slopes; tributaries, the Nyakatola, Nyambidzi, Chikokola and Magoma on left bank. It flows into the Ndindi marsh, and is the boundary between chiefs Mbenji and Makoko and chief Chimombo. It carries water all the year.

The Nyachilenda river drains the southern slopes of Nsampa hills and northern slopes of Lulwe hills and flows into Ndindi marsh, forming a boundary between Chiefs Ndamera and Nyatando. It carries water all the year.

The Ntundu river drains Lulwe hills to south and west; it flows into Nyachilenda river near Ndamera village, and carries water all the year.

The rivers Malindi, Nyachipere, Nyachilenda and Ntundu are running streams from December to April, and water is found by digging between April and December.

The Ndindi marsh, to the south of Port Herald, is 5 to 8 miles wide and about 30 miles long; it is separated from the Shire river by a bank from half-a-mile to 2 miles wide, intersected by natural ditches which drain the marsh into the Shire river as the latter falls. This marsh would be an ideal place for growing rice: cultivation would be easy by using ploughs and cattle; natives cultivate a small quantity, but they find other food stuffs so easily grown that they do not trouble. The marsh can only be crossed in canoes during the rains from December to April.

The entire district, with the exception of the Ndindi marsh, is heavily timbered; the forests are easily penetrated; timber in the plains is generally thorny and useless for manufacture, but the timber in the hills and higher ground is hard wood and useful for house and boat building. Mahogany is found in river and stream beds in the higher portions of the district.

The main road in the district runs from Ntondo village on the Shire river, on the northern boundary, to Nyatando on the southern boundary. This is the Chiromo-Senna main road. At Port Herald this road is connected by a 12-foot road with the Resident's house. There is also a 12-foot road from Kuzdyaduka to Marka, and from Nyatando to Marka in the dry season. There is a 10-foot road in the dry season connecting Port Herald and Marka along the river bank. Native paths connect all the villages in the plains, the main road being used as far as possible. A native path runs by the most direct and at the

same time easiest path along the western side of the district connecting the villages of the various Chiefs—Kamanga on the Tangasi, Ndondo in the Juepe hills, Nkuchi on the left bank of the Nyamazere, Mchacha on the right bank of the Nyamazere, Mbang'ombi on the left bank of the Malindi river, Msilanji on right bank Malindi river, Chingoma on left bank of Nyachipere river, and Nchacha near Lulwe peak. Villages in the plains are connected with this path by following paths:—All the villages north of Tengani village join a path at Nyanyumbi village on the Nyamyala river about 4 miles from Shire river. This path crosses the Khandi river, and leads to Ndondo village in the Juepe hills. A path leads from Chikao village to Nkuchi village, another from Chasuka village, another from Chirenji estate, and another from the Residency all lead to Nkuchi village and are machila paths with very little walking. A path leads from Port Herald *via* Mlelemba village to Mchacha village, Malawe hill: this is very steep but is several miles shorter than any other path; a path from Ngabu village up the Malindi valley to Mbang'ombi village to Chingoma village; this is the easiest path to cross the range of hills from Port Herald to the Makala hills in Portuguese territory; a path from Nsampa village up the Nyachilenda river *via* Lulwe mission to Kasawa and Mchacha village; a path from Nyatando village up the Ntundu river to Mchacha village, Lulwe.

Native paths join Kamanga village with the Zambesi river, Ndondo village and Zambesi river, Mchacha village, Malawe hill, to Zambesi *via* Makala hills. Chingoma village *via* Makala hills. Kasawa (Mchacha village) *via* Dombwe hill in Portuguese territory to Zambesi river.

A 6-foot path connects main road at Chimombo with Kasawa *via* Nsampa village and Lulwe mission; another connects same road at Nyatando village with Lulwe mission.

Native paths crossing the Ndindi marsh are provided with canoes for use in the time of floods.

There are no bridges.

The district is inhabited by natives of the Manganja tribe who are becoming mixed with natives of the Senna tribe who settle in increasing numbers under British protection. The language spoken is a mixture of Chinyanja and Chisenna, the older men and women speaking the former; efforts are being made to encourage the use of Chinyanja, and thus establish a natural division between British and Portuguese territory. The term Chikunda applied to natives of the district is really a term of contempt applied to them by the Yao tribe, and is considered offensive by the inhabitants.

The only native superstition is the belief that the spirit of the dead can influence nature for the good or ill of the living. Outside each village one can always see the little hut (about 4ft. by 2ft.) made of bango reeds in which is placed some native pots with a hole knocked in them; these are used to receive the offerings of beer to the spirit for some favour asked or expected.

This belief in the powers of a departed spirit to influence nature is very strong in the belief in the *Mbona*, which is now considered by the local natives as the spirit of the district with especial control of the rain and therefore the food supply. Offerings must be made in one hut only; in this hut lives a woman who keeps it clean and who is called the spirit's wife; offerings must be black or blue cloth, and the Chief tendering the offering must also be clothed in black. Mbona was a powerful Chief before and at the time of the arrival of the first Tenganis; he came from Mbewe and had settled in the district which was then uninhabited. Tenganis married the sister of Mbona. From the various versions of the history of this time the conclusion is that the original Tenganis killed or in some way made away with Mbona giving out that Mbona had become a spirit to watch over the natives and had appointed him, Tenganis, to succeed to the chieftainship of all Mbona villages as well as to act as priest to present offerings. The whole thing is now a belief. The people believe there is a great spirit more powerful than Mbona, but that this spirit is not personally interested in the district.

*Population.*—Europeans, 14 males, 3 females; Asiatics, 23 males; Natives, 10,652 males, 12,652 females. Children, 12,000 both sexes.

The population around and to the south of Port Herald is very dense; there is no land available for European cultivation nearer than 5 miles north and 10 miles south of the township with the exception of Ndindi marsh, which is all available for rice growing.

The staple food of the district is mapira, machewere, beans, chimanga, native potatoes and ground nuts. A very little rice is grown as well as vegetables for sale to Europeans. All cultivation is by hoe; no system of irrigation is in use.

The native cotton industry has so far done well and is expected in the near future to show further improvement; the crop for 1908 was over 40 tons (unginned cotton) and for 1909 over 100 tons.

Total stock in the hands of natives, 1909:—

Goats, 2,047. Sheep, 131. Pigs, 1,365.

Indians own about 100 head of cattle; these are used for overland transport to Chiromo.

The principal form of employment is as boat, barge, and canoe hands working between Port Herald and Villa Bocage. The railway requires a small number as well as local plantations.

There is a native market for the sale of local produce.

In Port Herald the African Lakes Corporation, Ltd., The British Central Africa Company and Shire Highlands Railway Company have stations. There are two boarding establishments in the town. There are cotton and rubber plantations at Nyatando and Panga. With small capital and energy, and careful working, cotton growing by Europeans would be successful.

Between Tenganis villages and Chiromo a variety of game is found, but in small quantities. Lions are at times troublesome.



# HISTORICAL SKETCH OF PROTECTORATE.

## PART I.—*Before the Establishment of the Government.*

1618. Very little is known of the history of the region now called Nyasaland before the middle of the past century. Jasper Bocarro, a Portuguese, is said to have been the first European to visit Nyasaland; he appears to have travelled early in the 17th century from the Zambesi to the junction of the Ruo and Shire rivers, and thence *via* Lake Shirwa and the Lujenda river to the coast at Mikandini.

The enterprise of Jesuit missionaries on the Zambesi would probably have led them to explore the unknown districts north of that river had not an order for their expulsion from all Portuguese territories been promulgated and carried into effect in the middle of the 18th century, an edict which doubtless caused a temporary cessation of the extension of Portuguese settlements in Africa.

1795. At the end of the 18th century, however, the Portuguese Government, alarmed at the possibilities opened out by the seizure of Cape Town by the English, authorized an expedition, under Dr. Lacerda, Governor of the Zambesi, which had for its object the connection of the Portuguese possessions on the east with those on the west coast of Africa. The expedition proved abortive, owing to the death of Dr. Lacerda after reaching Lake Mweru, whence his followers, instead of proceeding to Angola, returned to Tete.

1859. The real history of Nyasaland begins with the advent of Dr. Livingstone who, in 1859, after many years of travel and preparation, was placed at the head of a well-equipped Government expedition with the object of completing his previous researches on the Zambesi. Livingstone had heard reports of the great Lake from which the Shire was said to flow, and determined to find it. After experiencing considerable difficulty in ascending the Shire he discovered Lakes Shirwa and Malombe, and on the 16th September, 1859, reached the southern shore of Lake Nyasa. The name of the lake was recorded as Nyasa by Livingstone, that being its Yao appellation, signifying "broad water," and synonymous with the word Nyanza used further north.

Livingstone and his party, among whom was Dr. (afterwards Sir) John Kirk extended their exploration of the western coast of Nyasa to about half way up the lake, finally returning to Matete below the Murchison cataracts. While still engaged in exploring Nyasa and the Shire Highlands, Livingstone was joined by a mission, under Bishop Mackenzie, sent out by the two English Universities. This mission, under the name of the "Universities Mission to Central Africa," settled in the eastern part of the Shire Highlands, but withdrew in 1862 on account of constant conflict with Yaos and the loss, through sickness, of many of its members. It was subsequently re-established in 1881

on Lake Nyasa, where its headquarters still remain on Likoma Island.

1863-1866. Livingstone's expedition was recalled by the British Government in 1863, chiefly owing to political difficulties with the Portuguese, but its leader returned on his own account in 1866, landing at Mikandini in March of that year, and reaching the south-eastern gulf of Lake Nyasa on the 8th August. Walking round the southern end of the lake, Livingstone turned his steps north, but at Marenga's town, near the south-western extremity of Nyasa, his carriers, alarmed by rumours of Angoni-Zulu raids, deserted him and returned to Zanzibar, where they reported that he had been murdered by the Angoni.

Livingstone, however, pursued his way northwards, and an expedition which was sent out from England in 1867, under Lieutenant Young, reaching Nyasa by way of the Zambesi and Shire, ascertained that he had started for the west in safety and unmolested. His subsequent explorations, up to the time of his death in 1873, were outside the region of the Protectorate.

1874-1876. In 1874 the Livingstonia Mission was founded, and named in honour of the great explorer, by the Free Church of Scotland. The first party of missionaries was sent out in 1875, taking with it a small steamer, in sections, for use on the lake. They were joined in 1876 by the pioneers of the Church of Scotland Mission, who chose the site of the present town of Blantyre, and established themselves in the Shire Highlands, while the Free Church applied itself to the evangelization of the inhabitants of the shores of Lake Nyasa.

1877-1878. In 1877 Capt. Elton, H. M. Consul at Mozambique, obtained permission to conduct an expedition to Lake Nyasa in order to report on the slave trade, and by the aid of the Mission steamer *Ilala* reached the north end of the lake in October 1877. The Livingstonia or Ukinga mountains on the north-eastern coast (now German territory) were discovered and so named in 1875.

The Church of Scotland Mission soon began to find the difficulty of conducting trading operations in addition to the regular mission work, and the transport service between Lake Nyasa and the coast; it was therefore decided in 1878 to form a small company for trade and transport, subsequently styled the "African Lakes Company," with headquarters at Mandala, near Blantyre.

1881. In this year the Universities Mission, which since its withdrawal in 1862 had concentrated itself at Zanzibar, resumed work in Nyasaland, and eventually established itself on the island of Likoma about half-way up the lake, and 8 miles from the east coast, where it was less subject to molestation by hostile tribes.

Meanwhile the Livingstonia Mission had been making steady progress on the west coast of the lake, and had, to a great

extent, succeeded in stopping, by conciliatory measures, the raids of Angoni tribes against the coast people. About 1880 the society resolved to move from Cape Maclear to Bandawe. The relative position of Lake Tanganyika, with regard to Nyasa, was laid down in that year by the late James Stewart. A project for connecting the two lakes by a permanent road was entertained and financed by Mr. Stevenson, a director of the African Lakes Company, and the preliminary surveys were made, but the work was not completed.

1883. In 1883 the increasing British settlement in Nyasaland induced H. M. Government to appoint a consul, and Captain Foot, R. N., went in that capacity to Blantyre, taking as his private secretary Mr. D. Rankin, who afterwards discovered the Chinde mouth of the Zambesi.

During the past few years the Makololo chiefs on the Shire had much increased in power, two especially prominent men being Ramakukane, whose father, a Barotse headman, had accompanied Livingstone back to Nyasa, and Chipatula, one of Livingstone's old porters. These chiefs had been on the whole friendly, though at times showing a disposition to be arrogant and exacting in their demands. In 1884 Chipatula was shot in a quarrel by Fenwick, an ex-lay member of the Scotch Mission, who, having been dismissed in consequence of abuses of his position had turned hunter and trader on his own account. This incident led to the Makololo chief becoming inimical to the white settlers. Fenwick was killed by the natives to avenge Chipatula's death, and the little steamer *Lady Nyasa* was sunk by them. A large sum was also demanded as compensation for the killing of the chief. Captain Foot, however, succeeded, with the help of Ramakukane, in restoring peace, and the *Lady Nyasa* was recovered. Still the demeanour of the Makololo as time went on became increasingly insolent and hostile towards Europeans, both English and Portuguese, and constituted an element of danger to the settlements.

Another and more serious danger arose from the conflict with Arab slave traders who had settled at the north end of Lake Nyasa. At the time of Livingstone's first visit he found the Arabs established in a few places on what is now the Portuguese shore of the lake, and at Kota-Kota, on the west side, where there was a settlement under the control of a person called "Jumbe," a coast Arab and a representative of the Sultan of Zanzibar, who claimed authority over the Arabs wandering in those regions. Arab caravans, trading with the tribes in and beyond the valley of the Loangwa, were in the habit of crossing the lake on their way to and from the sea coast. In course of time these Arab traders established themselves in strong stockades in the Senga country, through which the Loangwa flows, and then adopted an alternative caravan route overland at the head of the lake. This brought them into contact with the Wankonde, inhabiting a fertile district on the north-west shore of Nyasa, and eventually

a Zanzibar Arab named Mlozi, who had commenced by trading in the country, proceeded to surround his trading stations with stockades with a view to taking forcible possession of the district.

1884 to 1888. About the time of Mlozi's settlement in the Nkonde country, the African Lakes Company had obtained a footing at Karonga for the purpose of opening up communication with Lake Tanganyika, and their agent, Mr. Monteith Fotheringham, in endeavouring to interpose between the Wankonde and Mlozi, was drawn into a conflict with the Arabs, who attacked and besieged Karonga. The Arab attack was eventually repulsed after desperate fighting, but Mr. Fotheringham, finding his position untenable, abandoned Karonga and, crossing the lake, remained at the north end until reinforcements arrived, when Mlozi's stockade at Mpata was attacked and partially destroyed. The success of this and subsequent hostilities early in the following year was, however, rendered incomplete owing to the vacillation of the native allies of the British. A fresh attempt to break up Mlozi's power was made in 1888 by a force of natives under Captain Lugard and other volunteers, but, though a good deal of damage was done to the Arabs, it was found impossible to bring the war to a satisfactory conclusion without the aid of disciplined troops and efficient artillery, and after several months of intermittent fighting Captain Lugard left Nyasaland in the spring of 1889. During this period, in November 1888, an envoy was sent by the Sultan of Zanzibar, at the instance of Sir C. Euan-Smith, H. M. Consul-General, to endeavour to compel the Arabs to come to terms with the British, but the mission proved fruitless as the Arabs declined to recognise the Sultan's authority.

In the autumn of 1889, Mr. (now Sir) H. H. Johnston, H. M. Consul at Mozambique, arrived in Nyasaland, and on the 22nd October concluded a treaty with Mlozi, who undertook to desist from further encroachment against the Wankonde, and peace was restored.

The consequences of this war had, however, aroused a considerable amount of hostility against Europeans among the Yao Mahommedans on the east of Lake Nyasa, since it was well understood by them to be connected with the suppression of the slave trade. Makanjira, a Yao chief of the south-east coast, seized and ill-treated Mr. Buchanan, the Acting Consul, and Mr. Johnson, a missionary who accompanied him in a visit made with the object of opening up friendly relations, and only released them after payment of a heavy ransom. This chief continued for many years to be a source of trouble to the settlers and missions, and was not finally conquered until 1895.

#### PART II.—*After the establishment of the Government.*

1889. The future of Nyasaland assumed an entirely new aspect on the discovery of a navigable entrance to the Zambesi by the Chinde mouth. This opened up a direct waterway to the Shire districts, and disposed of the obstacle to the development



of the country, hitherto caused by its only means of approach being through Portuguese territory. Two other events at this time also directed attention to Nyasaland and the possibilities connected with it, one being the application for a Charter by the British South Africa Company, and the other the despatch of an imposing expedition under Major Serpa Pinto, destined, according to the Portuguese Government, to proceed to the Upper Zambesi and Lower Loangwa.

In the summer of 1889 Mr. H. H. Johnston arrived at Mozambique to take up the duties of British Consul in Portuguese East Africa, and proceeded, as arranged previous to his departure from England, to travel in the interior with a view to reporting on the troubles with the Arabs. Mr. Johnston was conveyed from Mozambique in H. M. ship *Stork*, which crossed the Chinde bar without difficulty, and steamed up the river into the main stream where she anchored, and the journey was continued in smaller vessels up the Zambesi and Shire.

Near Chiromo Mr. Johnston came up with Major Serpa Pinto's expedition, consisting of a large native force and an European staff, which had been deflected northwards after traversing the Lower Zambesi. Major Serpa Pinto informed Mr. Johnston that his mission was of a scientific nature, and that he was on his way to Lake Nyasa, and requested the British Consul's good offices to secure him from molestation by the Makololo people through whose district his route lay. In reply he was advised by Mr. Johnston that the passage of so large a force was in itself likely to provoke hostilities, and was further warned that any political action on his part north of the Ruo would oblige Mr. Johnston to take steps to protect British interests.

In his journey up the Shire Mr. Johnston interviewed Mlauri, a powerful Makololo chief; who was equally hostile to the English and the Portuguese and had interfered constantly with the river trade. The commanding position of his village at Mbewe enabled him to completely dominate the passage of steamers, which were frequently called upon to pay toll before being allowed to pass to Katunga. Mlauri in spite of strong advice to refrain from interfering with the white men expressed his intention of attacking the Portuguese, which he subsequently did, and was severely defeated more than once.

Meanwhile, treaties having been concluded with the remaining Makololo chiefs and the Yaos round Blantyre, Mr. Johnston proceeded up the lake, leaving Mr. John Buchanan, Acting Consul, in charge with instructions as to the course to be pursued in the event of the Portuguese advance being continued north of the Ruo. After the first encounter between Major Serpa Pinto and Mlauri, Mr. Buchanan, acting on his instructions, proclaimed, on the 21st September, 1889, a British Protectorate over the Shire districts. Major Serpa Pinto thereupon returned to Mozambique for instructions leaving the command of his

expedition in the hands of Lieutenant Continho, who, after erecting a strong post at Chiromo, advanced up the Shire to Katunga, 28 miles from Blantyre. An ultimatum from Great Britain to Portugal resulted in the recall of the expedition, which was withdrawn south of the Ruu.

1890. Mr. Johnston, during his progress up the Lake, induced the Jumbe of Kota-Kota to place his country under British protection, and on arriving at Karonga arranged similar treaties with Mlozi and other Arab and Wahenga chiefs, after which he proceeded to Lake Tanganyika. On his return an agreement was made with Mponda, a Yao chief at the south end of the Lake, who had previously refused to treat, and by the end of January, 1890, Mr. Johnston was back in Mozambique.

1891. In the summer of that year an Anglo-Portuguese convention ratified the work of Mr. Johnston, Mr. Sharpe, and other pioneers of British Central Africa, and in the following spring a British Protectorate over the countries adjoining Nyasa was proclaimed. The Protectorate of Nyasaland, under the administration of an Imperial Commissioner, was confined to the regions adjoining the Shire and Lake Nyasa, the remainder of the territory comprised in the British sphere of influence north of the Zambesi being placed, subject to certain conditions, under the British South Africa Company. Mr. Johnston was appointed as the first Commissioner and Consul-General on 1st February, 1891, and, for nearly five years, also administered the British South Africa Company's sphere north of the Zambesi. The British South Africa Company, during this period, furnished an annual contribution to the expenses of the Protectorate, but in 1895 this arrangement ceased and the Company took the administration of its territory into its own hands. On the 22nd February, 1893, the name of the Protectorate was changed to the British Central Africa Protectorate.

The new Commissioner and his staff arrived at Chiromo, in July, 1891, in H. M. S. *Herald*, one of two river gunboats placed on the Zambesi by the Imperial Government, and found that the British settlers who had commenced coffee planting in the Mlanje mountains had been attacked by Chikumbu, a Yao slave trader in that district. Captain Maguire, an officer of the Indian Army, who had lately arrived in the Protectorate with a small force of Sikhs raised by him for police purposes, was despatched against Chikumbu, with the result that the latter was defeated and fled the country. In the autumn of the same year an expedition was conducted by the Commissioner and Captain Maguire against Makandanji and Mponda, slave raiding Yaos at the south end of Nyasa, which resulted in the former being attacked and his followers effectually dispersed, and the latter suing for peace after his town had been shelled. Zarafi, a powerful chief further to the east, hearing of these successes, sent envoys to treat for peace, and the district was thus

temporarily quieted. During this expedition Fort Johnston was constructed near Mponda's village.

It was now decided to chastise Makanjira for his outrage on Mr. Buchanan and other attacks on the missions. The steamer *Domira*, belonging to the African Lakes Company, was hired and a 7-pounder gun mounted in the bows, by means of which Makanjira's town was bombarded and after two days' fighting was completely destroyed, together with two or three dhows. The town of one of Makanjira's headmen, Saidi Mwazungu, further south, was also captured and destroyed a few days later, in return for an act of treachery which had nearly cost Captain Maguire his life.

Kawinga, a Yao chief living at the north-east extremity of the Zomba range, was the next to be attacked by Captain Maguire and Mr. Buchanan. After severe fighting, during which Captain Maguire was wounded, Kawinga sued for peace, which was arranged, and Captain Maguire then returned to Fort Johnston. Shortly afterwards in attempting to destroy two dhows belonging to Makanjira, on the 15th December, 1891, Captain Maguire perished, and the *Domira*, in which his party was being conveyed, narrowly escaped capture.

This was followed by fresh troubles in the neighbourhood of Fort Johnston with Msamara, a chief on the west bank of the Shire, and Zarafi. The former was made prisoner, and afterwards committed suicide in Fort Johnston. Zarafi's villages in the plains were captured with the help of volunteer officers, the Sikhs, and a numerous Angoni contingent, but further operations were stopped by the defection of the native porters supplied by Mponda.

1892. In February, 1892, Zarafi again became troublesome, and his hill-town was attacked by Mr. King with the garrison of Fort Johnston and a large Angoni force, but the expeditions met with a severe reverse, Mr. King and another European, Dr. Watson, being wounded, several Sikhs and Zanzibaris killed, and a 7-pounder gun and some rifles and ammunition left in the hands of the enemy.

The next few months brought much trouble to the Protectorate. The slave-trading Yaos in the Shire Highlands and Mlanje district made constant raids against carriers; Makanjira crossed over to the Rifu peninsula and drove out Kasembe, a friendly chief, and then proceeded to attack Jumbe. There were, besides, internal difficulties between the settlers and the Administration over land claims. However, before the end of the year 1892, the Government of the country had begun to assume a definite shape.

In May, Mr. J. L. Nicoll took up the duties of Collector for the South Nyasa district, which was gradually reduced to order. Later on three gunboats, built in sections, the *Dove*, *Pioneer*, and *Adventure*, arrived from England, having been sent out by

the Admiralty for service on the Lake and Upper Shire in connection with the suppression of the slave trade.

A German expedition, under Major von Wissmann, also came out with the same object on behalf of the German Anti-Slavery Society, and brought with it a steamer named the *Hermann von Wissmann*. Customs regulations were formulated, a head customs office was established at Chiromo, and steps were taken to institute a hut tax. The settlement of land claims was commenced, with certain reservations of Crown rights, and when all the claims had been dealt with treaties were concluded with the native chiefs securing Crown control over the remainder of the land. Courts of justice were instituted, and magistrates appointed. The construction of a road from Katunga to Blantyre was also undertaken.

1893. In February, 1893, a long-threatened outbreak of slave traders on the Upper Shire took place, Liwonde, the principal chief of the district, was concerned in the carrying off of some boys from Zomba, and a party which recovered them was attacked by his followers on the banks of the Shire, and was only relieved from a critical position by the arrival of reinforcements. Liwonde's town was then burned, but he himself escaped capture for some years.

In March, a further reinforcement of 100 Sikhs came from India under Lieutenant (afterwards Lieut.-Colonel) Edwards, and later in the year 100 more were brought by Lieutenant (now Colonel Sir W. H.) Manning. Police were also recruited from the Makua of Mozambique and the Atonga of West Nyasa.

During this year the Protectorate was divided into twelve administrative districts, certain administrative divisions were also defined in the adjoining territories of the British South Africa Company. As a protection to the south-east boundary Fort Lister was constructed in the Mlanje district, and advantage was taken of the arrival of the Sikh troops to bring the neighbouring chiefs into submission.

The completion of the gunboats on Lake Nyasa now enabled a strong expedition to be undertaken against Chikwawa, one of Jumbe's headmen who had been persuaded by Makanjira to revolt. After a preliminary bombardment, his fortified town, about 5 miles inland from Kota-Kota, was taken by assault and its walls levelled. Makanjira's settlements on both sides of the lake were next dealt with, and after the destruction of several of his towns Fort Maguire was built, on the south-east coast, to keep order in that district.

1894. In the beginning of 1894 Makanjira attacked Fort Maguire and the surrounding villages with a large force, but was defeated by Captain Edwards with great loss.

This year saw the organization of the civil service of the Protectorate which, with the postal service, was placed on a satisfactory footing. The Lake gunboats also were taken over from the Admiralty, and the question of the contingent of



Indian troops settled on a definite basis with the Government of India.

1895. In the following year the British South Africa Company took over the control of their territory, and their contribution to the Protectorate ceased, the Imperial Government repaying the Company a proportion of the sum expended by them in its defence and development.

Early in the year Kawinga again became very troublesome and after an attack made by him on the village of a friendly chief named Malemia had been repulsed it was decided to finally reduce him. His stronghold in Chikala mountain was captured by surprise, and his power completely broken by a force under Captain Manning and Consul Sharpe. Two other turbulent Yao chiefs, Matipwiri and his brother Kuntiramanja, were next subdued, and both subsequently captured.

The encouraging results of the new military organization shown by these expeditions enabled operations to be now taken against Zarafi, whose stronghold in Mangoche mountain was stormed successfully and the 7-pounder taken from Mr. King recaptured. Mponda's submission was next secured, and Makanjira's new capital taken and destroyed and his followers dispersed.

By this time matters at the north end of the lake had assumed a serious aspect. Mlozi and the Arabs were raiding in all directions for slaves, threatened some of the mission stations, and were openly defiant of British authority. Accordingly a force was organized under Mr. Johnston's personal direction, consisting of 100 Sikhs, 300 natives, and the following officers: Major Edwards, Lieuts. Coape-Smith, Herries-Smith, Alston, and several volunteers. The gunboats being insufficient for the transport of this number of troops to Karonga, the services of the German steamer *Hermann von Wissmann* were fortunately secured, and the expedition reached Karonga at the end of November. Mlozi's stockaded town was about 11 miles from Karonga on the south bank of the Rukuru, the passage of that river, about 6 miles from Karonga, being guarded by the stockades of Msalemu and Kopa Kopa.

In accordance with a plan previously agreed on three divisions of the force, on the night of the 1st December, following a circuitous route to the north, were placed during the darkness in positions commanding the approaches to Mlozi's town. On the morning of the 2nd a fourth division, with which were guns manned by a naval contingent under Commander Cullen, R.N.R., advanced from the lake, drove out the defenders of the Rukuru stockades and reached Mlozi's at midday. The town was surrounded and shelled, and a sortie made during the ensuing night repelled. An attempt at negotiation on the morning of the 3rd falling through, the bombardment was resumed, and in repelling a second sortie the Sikhs, following up a success, scaled the stockade and the town was captured without serious loss, Lieutenant Herries-Smith being the only European wounded. Mlozi

was discovered, after nightfall, hidden in his house. He was tried next day, and hanged in the presence of the Wankonde chiefs. The remainder of the Arab stockades in the North Nyasa district were subsequently destroyed. A new administration station was built at Karonga and a fort, called Fort Hill, erected near the British South Africa Company's boundary as a protection against Awemba raids.

While this was going on in the north, Lieutenant Alston and Mr. A. J. Swann had been making an expedition in the Marimba country against Saidi Mwazungu and Mwasi. The former surrendered, and the capital of the latter was stormed and taken. Mwasi escaped capture, but soon afterwards committed suicide. The campaign closed with the driving out of two Yao robber chiefs, Tambala and Mpemba, who had settled in the Central Angoniland district. Tambala's stronghold was captured, and he himself fled. Mpemba was afterwards taken prisoner. Tambala surrendered himself in 1908, was pardoned by the Governor and reinstated.

To guard the approaches to the Protectorate from the eastward a strong fort was built during the summer of 1895 on the site of Zarafi's town on Mangoche mountain.

1896. In the autumn of 1896 raids were made by the southern Angoni into the south-western portion of the Protectorate, and were punished by a force despatched against the chiefs Chikusi and Odete under Captains Stewart and Manning and Lieut. Alston.

1897. Punitive expeditions were necessitated, in August, 1897, against the Anguru of Lake Shirwa for highway robbery on the Protectorate roads, and against Mpezeni, chief of the Angoni Zulus, in December; the latter had threatened the safety of the European settlers at Loangweni, and a force of 800 Protectorate troops, under Lieut.-Colonel Manning and Captain Brake, with guns and maxims, was despatched against him. Loangweni was relieved, and the Angoni Zulus punished. A fort was erected on the boundary of the Protectorate and named Fort Manning.

1898-1906. Experimental planting commenced in coffee, and was carried on with success. Details of the various industries will be found under "Agriculture."

In December, 1902, a contract was signed by the Crown Agents for the Colonies and the Shire Highlands Railway Company, Ltd., for the construction and equipment of a line of railway from Chiromo to Blantyre, to be completed within five years from the 31st December, 1902, and afterwards extended to Lake Nyasa. In 1903 the Company constructed a line from Port Herald to Chiromo to overcome transport difficulties on the river, owing to which the contract period was extended to the 31st of December, 1908. On the 31st of March, 1908, the first train arrived at Blantyre from Port Herald, conveying the Governor and Lady Sharpe on their return from leave of

absence. Since that date the line has been open for passenger and freight traffic throughout its extent (113 miles), and has much facilitated transport.

In 1904 efforts were made to establish cotton growing both by Europeans and natives, and in order that cultivators should receive every assistance and advice a Cotton Expert was appointed in April, 1905, for 3 years. 12½ tons of cotton seed were distributed to natives in 1907. Details of quantity of ginned cotton exported will be found under "Agriculture." In 1908 a Director of Agriculture was appointed.

1907-1909. In July, 1907, the constitution of the Protectorate Government was changed by the publication of "The Nyasaland Order in Council, 1907," which provided for the change of name of the Protectorate from "British Central Africa" to "Nyasaland," the appointment of a "Governor and Commander-in-Chief" in lieu of "Commissioner and Commander-in-Chief" and the establishment of Executive and Legislative Councils, the latter to include both official and unofficial members to be nominated by the Crown. Sir Alfred Sharpe, K.C.M.G., C.B., was appointed first Governor and during his absence in England Sir William H. Manning, K.C.M.G., C.B. (late Inspector-General King's African Rifles) was appointed Acting Governor. The installation ceremony and administration of oaths to the Acting Governor and proclamation of the Order in Council took place at Government House on the 21st October, 1907, marking a new era in the history of the Protectorate. A list of the members of the two Councils is given on page 119.

Two Sessions of the Legislative Council are held annually, in May and November, and on such other occasions as found necessary for the enactment of legislation of an urgent nature.

The notable feature of 1909 was the increase in all products. In December, 1909, "Nyasaland Upland Cotton" fetched 10¼d. per lb., and was pronounced by experts to be the finest "American" cotton yet produced.

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*Photo by E. W. Davy.*

COUNCIL CHAMBER, GOVERNMENT OFFICES, ZOMBA.





## GEOLOGY AND MINERALS.

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The rock formations which make up the surface of the Nyasaland Protectorate comprise 3 great groups:—

- (1). An igneous group.
- (2). A sedimentary group.
- (3). A metamorphic group.

*Metamorphic Group.* In common with most of the continent of Africa, the surface of Nyasaland is composed chiefly of metamorphic gneisses and schists.

The most frequent of the gneisses is black and white rock, usually soft and crumbly, which is composed of alternating layers or folia of black mica (biotite), often with hornblende and white felspar together with some quartz.

Another common gneiss is a basic hornblendic gneiss, often composed of hornblende alone, but usually with an admixture of quartz and felspar. By a decrease in the amount of hornblende, and a consequent increase in the quartz and felspar present, this basic gneiss graduates in appearance towards the more common gneiss just mentioned. Sometimes the hornblende is changed into serpentine, talc or asbestos.

Graphitic gneiss, or gneiss containing graphite, is of fairly frequent occurrence, but the graphite is disseminated along the foliation planes of the rock, and only very occasionally does it occur in definable seams.

Garnetiferous gneiss is fairly common. The crystals of garnets may be up to 1 pound in weight, but usually they are about the size of a pin's head. The variety of garnet is Andradite, common or black garnet, and is of very little value.

Iron ores, ilmenite and magnetite often occur in the gneiss. As a rule they are finely disseminated or in thin seams among those gneisses which contain a large proportion of quartz. At times, however, the seams swell out into great masses, forming small ridges on the surface of the ground. Where these iron ores occur, the surface of the ground is thickly strewn with angular fragments of ore; these the natives use to smelt, although their chief source was a hematite or limonite to be mentioned later.

Crystalline limestone is in a few places found forming massive seams in the gneiss. Near Liwonde and at Shirwa Island this limestone is quarried and burnt. The limestone is as a rule quite white, but it is also pinkish and yellowish. As a rule it is pure, but it may be associated with accessory minerals in quantity sufficient to destroy its commercial value.

In addition to the gneisses there is a series of metamorphic schists, which have by no means so wide an extension as the gneisses. They comprise mica schists, composed of mica and quartz, and talc schists, composed of talc and a greater or less quantity of quartz.

These gneisses and schists form the basement of the country, and through this basement igneous rocks have been intruded. These rocks have all been more or less affected by the agencies which brought about the metamorphism of the gneisses and schists, and are consequently looked on as belonging to the metamorphic group. As a rule these rocks form the upstanding features of the country.

Probably at the same time as the igneous were intruded, pegmatitic veins and seams were forced along the planes of the gneiss, and now form seams of quartz, often with a little muscovite. From such quartz pegmatites in the Shire Highland gold has been reported by Sir Harry Johnston, who states that assays, however, never gave more than 5 dwt. to the ton. These pegmatites may also consist of quartz, felspar and muscovite or white mica, and the individual crystals may be of very large dimensions.

*Sedimentary group.* The sedimentary rocks of Nyasaland occupy a comparatively small part of the country. They may be grouped together thus:—

- A. Recent gravels, marls and alluvium.
- B. Coal bearing formation of Karroo age (permo-carboniferous).
- C. Older beds of possibly Cape age (Devonian).

#### OLDER BEDS OF CAPE (?) AGE.

These have so far been found only in one corner of the Protectorate, in the Namitawa or Mafingi hill. They consist of a great thickness of quartzites, conglomerates, greywackes, shales and flags. No fossils have been found in the beds, so that their age cannot be justly determined. They are, however, older than the coal-bearing formation, and possibly were formed at the same time as the Cape beds of South Africa.

#### COAL BEARING FORMATION.

This sedimentary series consists of an assemblage of conglomerates, pebbly sandstones, sandstones, shales, coal, mudstones and limestones. These beds have been long known at Mt. Waller, where they were described by the late Mr. Henry Drummond. Several other areas of this sedimentary rock in the North Nyasa district have lately been pegged out by various companies for the coal which they contain.

The limestone of the North Nyasa district is in part argillaceous: it is in places burnt and used as a building lime.

Fossils are not abundant in this formation, but *Glossopteris* has been identified, and it is practically certain that this formation in Nyasaland is of similar age to the Karroo formation of South Africa.

Beside the localities in the North Nyasa district the West Shire district also contains what is presumably the same formation. Here the formation consists of a great thickness of sandstones, together with coal seams and shales.

## RECENT DEPOSITS.

The formations that may be considered under this head consist of gravels, sands and marl, river alluvium, lateritic deposit.

Gravels and marl sands have been noted in the North Nyasa district at some distance from the shores of the Lake. They have also been noted in the West Shire district. These marls often contain fossil *Gasteropods*.

Alluvium is abundant along the shores of Lake Nyasa and of the other lakes of the Protectorate, and along the course of most of the rivers.

On the high plateaux, such as the S. E. part of the Nyasa-Tanganyika plateau, and the Angoniland plateau, a large part of the surface is covered by a deposit of dark red laterite. This consists of quartz pebbles and fine soil cemented together by limonite (oxide of iron). It is the iron of this laterite that some of the natives were accustomed to use for their iron smelting. This formation occurs most often along the banks or in the beds of streams.

*Igneous group.* There are at least two periods at which volcanic action manifested itself in the Protectorate. First there was the intrusion of igneous rocks which was mentioned above when speaking of the metamorphic group. Secondly there was the eruption of basaltic lavas near the end of Karroo times. A large part of the country between Chiromo and Chikwawa consists of these basaltic lavas, bedded with sandstones of almost certainly Karroo age. Basalt dykes are frequent in this district, and right throughout the country basalt dykes are found. It is not necessary, however, that these dykes all belong to the same period of eruption.

The upper part of Mlanje has been reported to be composed of volcanic rock.

To-day there is no manifest volcanic action, but the hot springs at Kota-Kota and at Liwonde bear evidence to an expiring volcanicity.

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## ZOOLOGY.

The Nyasaland zoological region, whilst closely allied to that of South Africa and British East Africa, is remarkable in that it furnishes a break in the continuity of certain animals which are found in both of the above mentioned countries. Thus the Ard Wolf, Caracal Lynx, the long eared Foxes, Mountain Asses, Oryx Antelopes, the Gazelles, the true Jerboas, the Ant Bear, the Secretary Vulture, and the Ostrich are all absent from Nyasaland.

From the West African region Nyasaland differs in not possessing any form of anthropoid Ape, the absence of a good many Monkeys, several of the smaller Antelopes, and the Dorcatherium.

The points of resemblance are that Nyasaland possesses a peculiar Civet Cat (*Nandinia*), one or more genera of Bats, a Colobus Monkey, almost identical with the West African forms, and among birds the occurrence of the remarkable black and white vulturine fishing Eagle (*Gypohierax angolensis*) in both regions.

### Mammals.

#### Order, PRIMATES.

[Native names in parentheses : (M)=Man'ganja ; (Y)=Yao ;  
(S)=Swahili.]

*Colobus palliatus*.—The white thighed Colobus Monkey is rare, being found in the mountain regions to the north and west of Lake Nyasa. The fur is long and black with the exception of the thighs. (S) *Mbega*.

*Cercopithecus pygerythrus*.—The Mozambique Monkey is very common. (M) *Pusi*; (Y) *Chitumbiri*; (S) *Kima*.

*Cercopithecus albicularis*.—The white throated Grivet Monkey, occurs in the Shire province, and probably in other districts.

*Cercopithecus stairsi*.—Stairs's Monkey, a distinct species, allied to the preceding, occurs in the Zambesi delta at Chinde.

*Cercopithecus opisthostictus*.—Has been discovered in the Lake Mweru district, and is allied to the Samango Monkey of South Africa.

*Cynocephalus pruinosis*.—The Gray Baboon, occurs on the south of Lake Nyasa. It has fur of a pale bluish grey above and a dirty white below.

*Cynocephalus babouin*.—The Yellow Baboon is very common, bold and cunning. It is continually robbing native and other gardens, and when raiding, one or more invariably stand sentry to warn the others of any approaching danger. They are not very shy of approach unless one is armed with a gun. The young are easily tamed, and make amusing but impudent pets. The males grow to the size of a large mastiff. (M) *Nyani*; (Y) *Lijani*.

*Galago kirki*.—The great *Galago*, has only been met with in the Shire province. It is a beautiful animal, about the size of a cat. The colour is a whitish grey, the tail exceedingly bushy. When captured full grown it is intractable, and difficult to tame. The young are pretty creatures like *Chinchillas*, and are easily tamed. (M) *Changa*; (Y) *Likomba*.

*Galago maholi*.—Has been discovered, but little is known of its distribution in the Protectorate. The leaping powers of both are remarkable. (M) *Kamundi*; (Y) *Chipimbi*.

Order, CHIROPTERA (Bats).

*Epomophorus crypturus*.—The hidden tailed Fruit Bat. (M) *Muleme*; (Y) *Lichinji* (apparently generic names).

*Xantharpyia straminea*, the yellow Fox-Bat.

*Rhinolophus capensis*

„ *caffer*

„ *landeri*

} Horseshoe-nosed Bats.

*Hipposiderus caffer*.

*Nycteris hispida*.

*Vesperugo megalurus*.

„ *nanus*.

„ *rendalli*.—A white winged bat from the Gambia, occurs on the Upper Shire.

*Scotophilus nigrita*.

Order, INSECTIVORA.

*Rhyncocyon cirnei*.—The long nosed jumping shrew. (M) *Sakwi*; (Y) *Litawala*.

*Petrodromus tetradactylus*.—The rock-jumping shrew.

*Crocidura* sp.—Small musk shrew.

All of these are very pretty animals, with large eyes and soft fur. They do not, however, thrive under captivity.

Order, CARNIVORA.

*Felis leo*.—The Lion, is still fairly plentiful in Nyasaland. (M) *Mkango*; (Y) *Lisimba*; (S) *Simba*.

*Felis pardus*.—The Leopard, is common in most parts, particularly in the vicinity of mountains. It varies much in colouration according to size, season and age. It is very destructive among small game, sheep, goats, poultry, etc. (M) *Nyalugwe*; (Y) *Chisuwi*; (S) *Chui*.

*Felis serval*.—The Serval Cat, is very common. The young can be tamed and kept in confinement. It destroys a lot of small game and poultry. (M) *Njusi*; (Y) *Njusi*.

*Felis caffra*.—Is the type of the native domestic cat. It is fairly common, and mingles with the domesticated animal. Natives occasionally bring the kittens in from the bush and tame them. They destroy a lot of poultry. (M) *Bvumbwe*; (Y) *Chiulu*.

*Cynælurus jubatus*.—The Cheetah, is not often found in Nyasaland, though it occurs along the Nyasa-Tanganyika plateau, and has been captured in the Dedza district.

- Hyæna crocuta*.—The Spotted Hyæna, is moderately plentiful. It differs from the true cats in possessing more teeth, and its claws are non-retractile. Extreme forms are over 6 feet long from nose to tail, and about 3 feet high. (M) *Fisi*; (Y) *Lituni*; (S) *Fisi*.
- Viverra civett*.—The Civet Cat, is common, but rarely seen owing to its nocturnal habits. (M) *Chombwe*; (Y) *Ungo*; (S) *Fungo*.
- Genetta tigrina*.—The Blotched Genet, with large rich umber instead of brown spots, is fairly common in the Highlands. It makes a charming house pet. (M) *Mwiri*; (Y) *Mbendu*.
- Nandinia gerrardi*.—The Palm Civet, occurs in North Nyasaland only. It is related to the West African forms.
- Herpestes galera*                    { Ichneumons, or Mongooses. (M) *Msuk-*  
 „      *gracilis*                    {      *unya* and *Likongwe*; (Y) *Chindindi*; (S) *Mchiro*.
- Rhyncogale mellerii*.—The fruit eating Mongoose.
- Crossarchus fasciatus*.—The banded Mongoose, allied to a West African form and also found in South Africa. (M) *Msulu*; (Y) *Lisulu*.
- Canis lateralis*.—The side striped Jackal, is common in most of the highland districts. (M) *Nkhandwe*; (Y) *Likule*.
- Lycaon pictus*.—The Hunting Dog, is found in a few lonely parts of the Protectorate, in packs of from four to thirty. (M) *Mumbulu*; (Y) *Lisogo*; (S) *Bize*.
- Poecilogale albinucha*.—A pretty white necked Weasel, occurs in the Shire Highlands. (M) *Kanyimbi*; (Y) *Kanyelu*.
- Mellivora ratel*.—The Honey Badger, occurs sparingly in the Highlands. It is easily tamed, and lives chiefly on honey and insects. (M) *Chuli*; (Y) *Mkule*.
- Lutra maculicollis*.—The spotted necked Otter; and *Lutra carpen-*  
*sis*, the Cape Otter,—Occur along many of the moder-  
 ately sized rivers. (M) *Katumbu*; (Y) *Kausi*.

#### Order, RODENTIA.

This is a well represented order in Nyasaland, and includes 3 Squirrels—(M) *Gologolo*—and a very large number of Mice and Rats, all distinguished by special native names, several species being greedily eaten by certain tribes. The *Aulocodus swinderenianus*, a large ground Rat—(M) *Nchenzi*; (Y) *Ngungusi*—is considered excellent eating by many Europeans. It is fond of sugar, and is most frequently found in sugar plantations. There is certainly one species of Porcupine found in the hills, and according to the natives, two species, known as *Nungu* and *Kanungu*, (M) and (S); (Y) *Ndinu*, the latter a smaller species. They are rarely seen owing to their nocturnal habits. The Porcupine is also fairly common in the River Shire districts. *Lepus whytei*, or Whyte's Hare, is very common. It is the “*Kalulu*” of the natives—(M) *Kalulu*; (Y) and (S) *Sungura*—and occupies the same place in their folklore stories as does the fox in

the case of European fables, it being the symbol of cunning, always outwitting its much larger animal companions.

Order, UNGULATA.

*Procavia johnstonii* }  
 „ *brucei* } Are common in the rocky mountains  
 and hills. They are quaint little animals not unlike a rabbit in general appearance. (M) *Mbira*; (Y) *Njechele*.

Sub-order, PROBOSCIDEA.

*Elephas africanus*.—The elephant, is still fairly common in certain districts, such as Angoniland, South Nyasa, etc. It is apparently increasing in numbers owing to the protection it receives, but large tuskers are now rarely met with. It feeds on such fruits as are in season, together with the tips of the Phragmites reeds, the roots of certain trees, and it always shows a liking for bamboo thickets. (M) *Njobvu*; (Y) *Ndembo*; (S) *Tembo*.

Sub-order, PERISSODACTYLA.

*Rhinoceros bicornis*.—The common rhinoceros of Africa, is found in several parts of the Protectorate, especially along the Kirk mountains, Nyika plateau and Mlanje. It has a curious habit of scattering its faeces, occasionally returning from a distance to do so. It has a fierce temper, and needs to be hunted with caution. (M) and (Y) *Chipembere*; (S) *Kifaro*.

*Equus burchelli*.—Burchell's Zebra, is generally plentiful, preferring hilly country. Solitary stallions turned out of a tribe are sometimes seen among herds of Hartbeeste. The Nyasaland Zebra is more distinctly and beautifully striped than its East and South African congeners. (M) *Mbidzi*; (Y) *Mbunda*; (S) *Punda milia*.

Sub-order, ARTIODACTYLA.

*Hippopotamus amphibius*.—Is still fairly plentiful on all the large rivers such as the Zambesi, Shire, Tutchila, etc. Full grown specimens weighing 3 tons have been secured. The flesh is much valued by natives, and the hides are used for manufacturing into whips. (M) *Mvu*; (Y) *Ndomondo*; (S) *Kiboko*.

*Potamochoerus johnstonii*.—Is a small species of Bush Pig.

*Potamochoerus chaeropotamus*.—The Bush Pig, is very common throughout Nyasaland. It inhabits dense bush, and is not often seen owing to its habits being chiefly nocturnal, coming out into the open to feed just before sunset, and often in companies of from 6 to 10. It is reddish in colour and about 30 inches in height at the shoulder. The ears are often surmounted by tufts of long hair. (M), (Y) and (S) *Nguluwe*.

*Phacochoerus africanus*.—The Wart Hog, is very common, preferring districts with a dry sandy soil. It is generally found solitary or in pairs. The young, of which 3 are



usually produced at birth, differ from other pigs in being neither spotted nor striped. It is one of the ugliest of African mammals, and has a very bad temper. It has a peculiar habit of kneeling down on its forelegs when digging for roots. It differs from the true pigs in having the stout upper tusks longer than the lower pairs. Skin naked, except along the neck and back, which carries a mane of long bristly hairs. (M) *Njiri*; (Y) *Mbango*; (S) *Jivi*.

*Giraffa camelopardalis*.—Is not known to occur in Nyasaland.

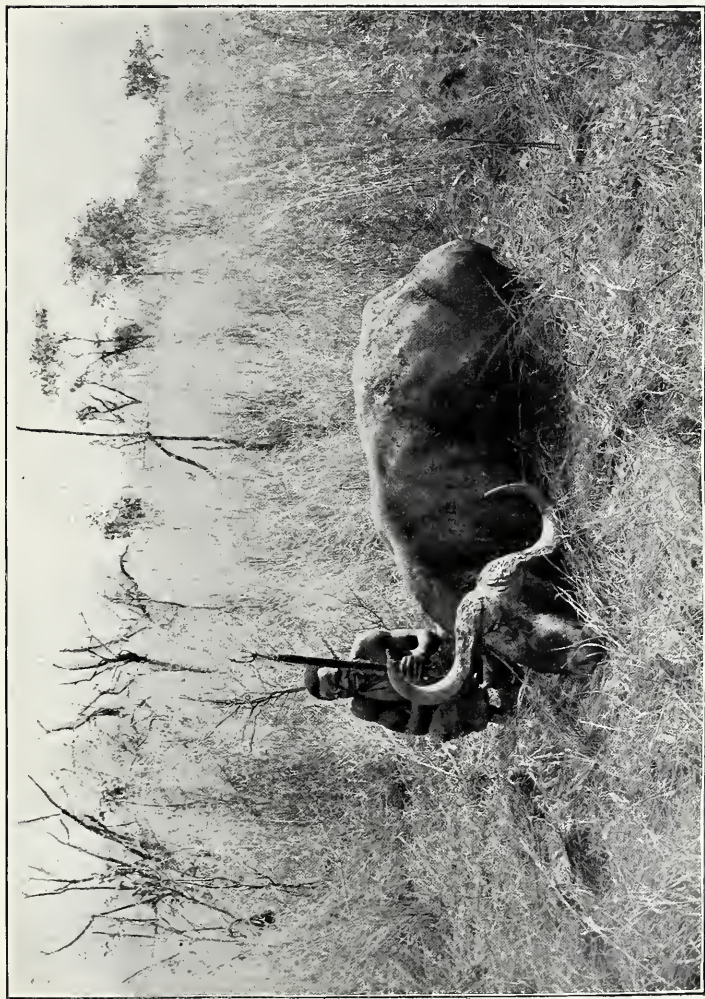
*Tragelaphus scriptus*.—The Bushbuck, is very common in the more wooded parts of the country, and at varying altitudes. It is a very shy and wary antelope, and old males are hard to find. The males are dark brown in colour, having only faint indications of the white markings found in the females. The Nyasaland type is known as Gordon-Cumming's Bushbuck. (M) *Mbawala*.

*Tragelaphus angasi*.—The Inyala, occurs along the west side of the Shire River. It stands about 40 inches high at the shoulder and weighs from 250 to 300 lbs. The hair is very long and coarse in both sexes. Colour in the males, dark greyish brown with a few indistinct white stripes; females, bright reddish chestnut with clearly defined stripes. Males with a fringe of long hair on the neck and under side of body. Hoofs short. (M) *Boo*.

*Tragelaphus spekei*.—The Situtunga, or Water Bushbuck, is found in the swamps of Mweru, Bangwelo, and Luapula river, where it is fairly plentiful, but it has not been recorded from Nyasaland.

*Strepsiceros kudu*.—The Kudu is amongst the handsomest of all antelopes. The spiral horns, striped coat, and noble carriage all conduce to making them really magnificent creatures. Both sexes are nearly the same in colour. They reach to a height of 5 feet at the shoulder, and have a fringe of long hair on the throat. A most adept antelope at concealment, it affects bushy country in which its markings blend remarkably well with the shadows cast by the trees. This trait, combined with its wariness and acute sense of smell and hearing, has largely contributed to its survival. Horned females occur but rarely. (M) *Ngoma*; (Y) *Ndandala*.

*Taurotragos oryx livingstonianus*.—The Eland is plentiful. It is the largest of all the antelopes, and horns are present in both sexes, those of the females being more slender. The Nyasaland type is exclusively the variety "livingstonianus," differing from the main species by the bulls having a dark band on the legs, above the knees, and the body of both sexes being marked by fine vertical white lines. (M) *Nchefu*; (Y) *Mbunju*; (S) *Mpofu*.



*Photo by R. H. Salmon.*

**BUFFALO.**



*Bos caffer*.—The Buffalo, is found far from settlements, and usually in plains and wide marshy districts. It is a very difficult and dangerous beast to hunt under certain conditions, and the hunter has need to exercise extreme caution when following up a wounded animal. The calves are born during March and April, being fairly easy to tame. (M) and (Y) *Njati*; (S) *Nyati*.

*Cephalophus grimmii*.—The Duyker antelope, is found wherever there is a slight cover of grass and scrub, generally singly or in pairs. It stands about 20 inches high at the shoulder. The horns are short and straight, and absent in the females. Absence of water is no bar to the existence of this little antelope. (M) and (Y) *Gwapi*; (S) *Dondoro*.

*Cephalophus nyassæ*.—Occurs chiefly in the Mlanje district, where it is uncommon.

*Orcotragus saltator*.—The Klipspringer, is found in nearly all rocky mountain districts. It can be distinguished from all the other antelopes by its peculiar hair and hoofs. The latter are large, blunt, and cylindrical, and so situated with respect to the rest of the limb, that the animal walks on what corresponds to their tips in other animals, the whole hoof thus rising vertically from the ground. The hair is very brittle, and has a pithy structure, and the tail is reduced to a mere rudimentary stump. The horns of the bucks rise nearly vertically from the head, and are only 2 or 3 inches long as a rule. It is very difficult to stalk, owing to its extremely agile action, bounding from rock to rock like an India rubber ball. (M) *Chinkoma*; (Y) *Chiwalama*.

*Ourebia scoparia*.—The Cape Oribi, a diminutive buck, about 24 inches high, is fairly common, and can often be killed with a shot gun. It is excellent for eating. Horns of bucks are comparatively smooth and slender. Tail tufted, moderately bristly, terminal two-thirds black.

*Ourebia hastata*.—Peter's Oribi, is also fairly common.

*Raphicerus sharpei*.—A tiny little antelope, found at the south end of Lake Nyasa, is allied to the Steinbuck of South Africa. It is not unlike a hare in its habits, often lying close in the grass until trodden upon. (M) and (Y) *Kasanya*.

*Cervicapra arundinum*.—The Reedbuck, is one of the commonest of the antelopes found in Nyasaland, occurring in nearly every district. It differs from the Waterbucks in its inferior size, lighter build, and in the presence of a bare or very shortly-haired patch beneath the ears. The horns, of medium size, curve regularly upwards, and occasionally forward. It is generally found in large family parties, and when alarmed gives a peculiar



shrill whistle. It is not difficult to shoot, and the flesh is of fair quality. (M) *Mpoyo*; (Y) *Ndope*.

*Cobus vardonii*.—The Puku, does not often occur in Nyasaland, but is fairly common in the Luangwa Valley, at Lake Mweru, and on the Bua river.

*Cobus lechwe*.—The Lechwe Waterbuck, occurs along with the above species, but has not been recorded from Nyasaland.

*Cobus ellipsiprymnus*.—The Waterbuck, is common in most river and marshy districts. The flesh is uneatable by Europeans, but the hides are useful for shoe leather. (M) *Nakodzwe*; (Y) *Ndogolo*.

*Aepyceros melampus*.—The Impala antelope, is fairly common in the vicinity of the Shire and Lake Nyasa. It is an extremely graceful and fleet antelope, and has a peculiar habit of jumping high in the air as it travels along. The horns which are long in proportion to the size of the animal, possess a graceful double curvature. The fur is of a bright foxy red colour, and there is a tuft of black hair on each hind foot. (M) and (Y) *Nswala*.

*Bubalis lichtensteini*.—The Hartebeeste, is fairly common and widely distributed, preferring open country and often found in herds of from 20 to 30. It is about 50 inches high at the shoulder and weighs 300 lbs. The general colour is tawny yellow, which becomes rufous along the back. (M) *Ngondo*; (Y) *Ngose*; (S) *Kongone*.

*Bubalis jacksoni*.—Jackson's Hartebeeste, has been reported from North Nyasaland.

*Connochaetes taurinus johnstoni*.—The Wildebeeste Gnu, is nowhere very plentiful although widely distributed. (M) *Nyumbu*; (Y) *Sindi*; (S) *Nyumbo*.

*Hippotragus equinus*.—The Roan Antelope, is somewhat like the Sable but larger in size with shorter horns and mane, large ears and eye tufts and a grizzled roan coat. It is rather scarce in Nyasaland, being found in the Ruo and North Nyasa districts.

*Hippotragus niger*.—The Sable, is common in most districts. The horns are scimitar shaped and long, the coat sable with a long neck mane, and a white stripe from the eye to the muzzle. A beautiful antelope, it runs with considerable speed and possesses great staying powers. When wounded it is dangerous, and must be approached with caution. (M) *Mpalapala*; (Y) *Mbalapi*; (S) *Parahara*.

#### Order, EDENTATA.

*Manis temminicki*.—The scaly Ant-eater, is found sparingly in a few districts only. The flesh is a great delicacy, being considered a Chief's dish. (M) and (Y) *Nkaka*.

## AVI FAUNA.

Nyasaland is rich in bird life. Among the more remarkable are 2 species of Crow (possibly 3), *viz.*, the great white necked Raven, the common white-and-black Crow, and probably the black Crow or Rook of South Africa. The Raven is common on the hills, being replaced by the Crow on the plains. The latter is an excellent scavenger, and not such a robber as the Raven. There are no forms of Magpie or Jay in Nyasaland.

The most noteworthy of the Starlings is the red-billed Oxpecker, which clings by its sharp claws to the bodies of buffalo and other large herbivora, and removes the blood sucking ticks from their skins.

Orioles are represented by 3 species, and Weaver Birds are common, the most remarkable of the latter being the Widow Bird (*Vidua paradisea*). The male in the breeding season develops enormous black plumes as an addition to his tail feathers more than three times as long as his body.

Closely allied to the Weavers are the tiny Waxbills or Weaver Finches, some of which for their minute size and brilliant colouration are only excelled by the Humming Birds.

One Sparrow, common also to South Africa, the *Passer diffusus*, is plentiful.

There are several Buntings, pretty birds of a black, grey, and yellowish colour, having a pleasant song, for which reason they are kept as pets by some natives, as are the Serin Finches, which are allied to the Canary.

Wagtails of 2 or more species visit Nyasaland during the dry season when they flit about among native villages and European settlements with charming familiarity and freedom from fear.

Of Thrushes there are 3 species, and of Warblers about 20 genera, including a Nightingale, which comes as a winter visitor, so that there is no lack of singing birds. The song of the Mlanje Thrush is scarcely to be distinguished from that of the English.

Three species of Swallow have been collected, one of which is the common swallow that migrates to Europe; 5 species of Woodpecker are known, and there are several species of Cuckoo, 2 of which are allied to the species found in England. Turacos or plantain eaters are represented by 3 species, each possessing gorgeous plumage.

Of Parrots only 2 genera are indigenous in Nyasaland, *viz.*, the Love-Bird and the *Pococephala* Parrots, the latter extremely common, generally green, yellow, and blue in colour, not unlike the Amazonian species. They are usually very sulky and untameable birds.

The Hornbills include an excellent scavenger, the *Bucorvus caffer*, which devours offal of all kinds, snakes and other reptiles, rats, mice and other small mammals in a most impartial manner.

There are also two Trumpet Hornbills, found in the better forested parts of the country. Their noise is most distracting as it re-echoes through the forest, resembling the braying of an ass.

Kingfishers are represented by about 9 species, several of which are of a large size, and some of which subsist largely upon insects at some distance from water.

Among the Owls the more remarkable are the large Eagle Owl, and a fishing species. The Barn Owl, scarcely differing in plumage from the English bird, is very common.

The Anseres include the Spur-winged Goose, a fine large bird, with dark blackish brown plumage, shot with iridescent tints of bronzy green, white wing coverts, and a white patch on the wings and stomach. In the adult male the wing is armed at the wrist with a spur at least an inch long. It is readily domesticated, but does not breed easily in captivity. Though a fine looking bird it is poor eating, the flesh being dark, coarse and strong. The Egyptian Goose is fairly common on large sheets of water, and is more eatable. It is apparently intermediate between the ducks and the true geese. The Tree Ducks are represented by 3 species very common in marshy districts; and there are several other species of duck, also a Tree Teal, all delicious eating.

Cranes are very common, but only represented by 2 species, the handsome Crowned Crane, and a species resembling the Stanley Crane of South Africa. The former is easily domesticated, and a most excellent subject for the garden, both for ornament and utility.

The large black-bellied Bustard is occasionally found in the more arid parts of the Protectorate only.

Hérons and Storks are very common, and include several species, of which the more noteworthy are the Adjutant or Marabou Stork, and the Egrets, both much sought on account of their handsome feathers, which fetch high prices on European markets. The Ibises include the handsome Sacred Ibis, and a few other species.

Flamingoes occur on Lakes Shirwa and Pamalombe, parts of Lake Nyasa and the Upper Shire River.

One species of Cormorant is very common on the larger rivers and on the lakes, and in similar situations the smaller Pelican may often be found.

Plovers are well represented; one, the spur winged plover, is reputed to warn crocodiles of an approaching enemy and to pick at the interstices of their teeth.

One Woodcock and the Painted Snipe occur in certain districts, and the common Ruff is a visitor during a portion of the year.

Eagles, Hawks, Vultures, etc., are well represented, the most remarkable being the warlike crested Eagle.

Pigeons are plentiful, and include the great purple Wood Pigeon, Delandes Fruit Pigeon, 2 Turtle Doves, and 3 other species.

Gallinaceous birds are represented by the Crested Guinea Fowl, the common Guinea Fowl, which occurs in nearly all districts in abundance, 2 Francolins, 1 of which is almost as large as a pheasant, and is delicious for eating, also 2 Quails, which are very plentiful in short grassy, meadow-like land in the highlands. Excellent sport can be obtained in shooting any of these gallinaceous birds.

#### REPTILES.

The reptiles of Nyasaland include the Crocodile, which is extremely common, especially along the Shire river, where it attains a large size and is extremely bold.

Tortoises are represented by 9 species, including the soft aquatic and carnivorous species, known locally as the Lake Nyasa Turtle.

The only remarkable Lizards are those of the Monitor type, which frequently attain a length of 5 or 6 feet. The smaller species are in many instances brilliantly coloured. Chameleons are represented by 5 species, all of which, as well as the Lizards, are superstitiously feared by the natives.

The most noteworthy of the non-venomous snakes is the common African Python, generally found in the vicinity of large rivers and swamps. Specimens nearly 20 feet long have been secured. There are several venomous species, which include 3 dangerous Cobras, and the Puff Adder. The most dreaded is the Mamba or Tree Cobra. It is rare to hear of natives dying from snake bite.

#### AMPHIBIA (Frogs, etc.).

Whilst many species of Amphibia are very plentiful throughout Nyasaland, there are none of special interest.

#### ARACHNIDA.

Scorpions are fairly abundant in certain of the Lake and Lower River districts, and ticks are abundant, especially during the rains. One of these inflicts a poisonous bite which causes much irritation, and frequently terminates in an attack of fever. Poisonous centipedes and harmless millipedes are very common. Earthworms are present in hilly districts only, as far as present knowledge goes. Leeches occur in many localities.

#### FISHES.

Fish of the perch, carp and barbel type are plentiful in most parts of the Protectorate, and in the Lower Shire and Ruwara rivers the well-known sporting "Tiger" fish is found.

Little accurate knowledge concerning the native fish of the Protectorate has so far been gathered, but many types, excellent for eating, occur in Lakes Nyasa and Shirwa and in the Shire and lower reaches of most rivers.



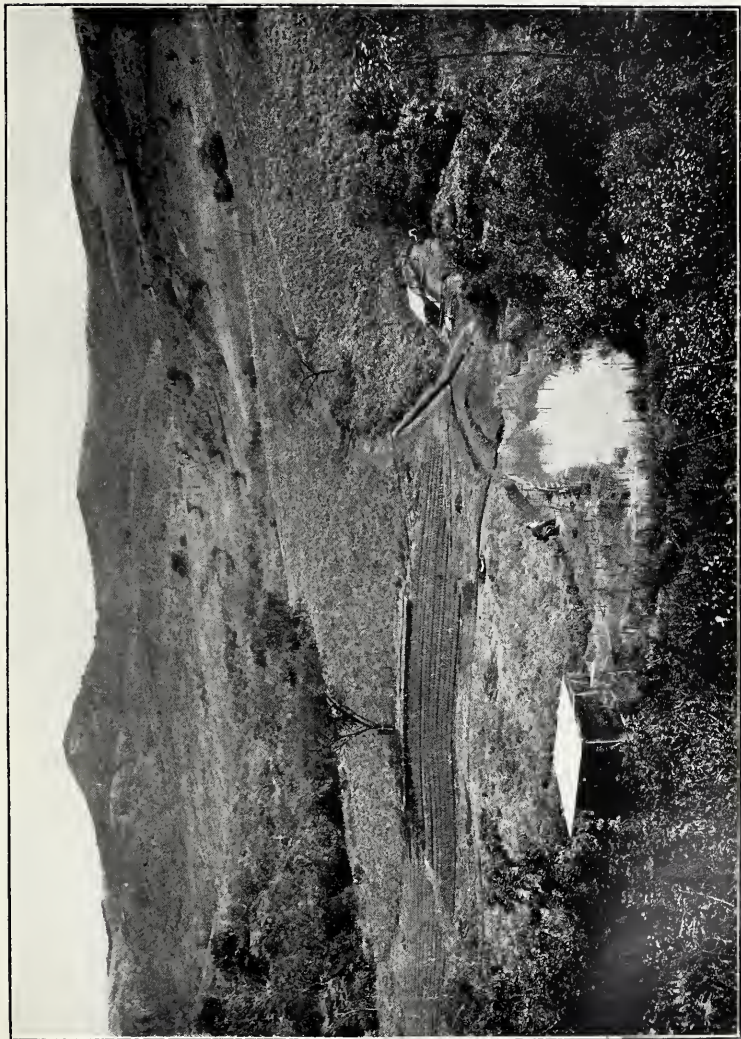
Fishing in the Ruw at its junction with the Shire and in Lake Nyasa affords good sport, and it would be well worth the while of any sportsman or zoologist, fond of travel and with time and money at his command, to visit Lake Nyasa with a view to thoroughly exploring its resources in this respect. With regard to equipment, spinners and spoons, also bottom tackle of the ledger type, would be likely to give the best results. The warm months of the year, *viz.*, October to March, are the best for fishing. At that season a species of carp closely allied to the mahseer of India gives good sport with the spoon, and is not infrequently met with up to ten or fifteen pounds in weight. It has not been proved that this carp does not run to a larger size. Fish of other kinds, sometimes of great size, have been reported from more or less reliable sources to have been seen floating on the surface, and their skulls have been found washed up on the beaches of the Lake at the north end.

Trawling has not so far been tried, but if systematically carried out would probably bring to notice many interesting fish both large and small.

The possibilities of fishing in Lake Nyasa may be gathered from the fact that it swarms with fish, has clear, sweet water covering an area of 11,525 square miles, and has a depth of 2,000 feet in places. The lake has a water temperature ranging from 70 to 80 degrees Fahrenheit, but is subject to sudden winds and storms during May to July, which makes it dangerous for sailing, particularly as there is a lack of suitable harbours or shelter. The steamers plying on the lake experience no difficulty, however, in readily finding shelter.

The rivers above the altitude of 3,000 or 4,000 feet, although supplied with excellent running water with a temperature varying from 48 degrees to 60 degrees Fahrenheit, are usually devoid of all fish life beyond a few small species resembling the minnow and roach, but as certain streams have been proved to be suitable for trout, a fish hatchery was established on Zomba Mountain plateau.

A scheme was first set on foot in 1905 for the introduction of brown trout into the Protectorate. The experiment that followed was a failure, as the ova perished in transit, but in 1906 a consignment of rainbow trout, brought by a visitor to the country, was more successful. A few eggs came through safely and the resulting fish have done well, some having reached a weight of five pounds. The first lot of fry bred from these fish appeared in October, 1908, and are now (September, 1909) to be met with up to 9 inches in length. A second consignment of American and brown trout, sent out by the Government in 1908, was equally successful, and the fish that resulted have done well, though they have not yet spawned and their growth has not been so fast as in the case of the rainbows.



*Photo by E. S. England.*

**TROUT HATCHERY, ZOMBA PLATEAU.**



The rainbows spawn early in September under natural conditions, but so far no ova have been obtained from captive fish. A female rainbow taken by an otter from a pond in the hatchery recently was found to be full of ova, however, and would doubtless have been successfully spawned eventually, had it not been killed.

The acclimatisation of trout in this Protectorate is therefore an accomplished fact, and it is only a matter of time and of the fish being distributed for them to become common in all the principal rivers of the highlands, where they are expected to thrive equally as well as in South Africa.

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# GAME REGULATIONS.

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Large game is fairly abundant in the Protectorate, and nearly every species of African antelope can be found within its borders. With a view, however, to preserve it from indiscriminate slaughter, two areas have been set aside as "game reserves" under the names of the Elephant Marsh and Central Angoniland Reserves. Wild animals not protected by game laws include lion, leopard, hyæna, mongoose, and otter, as well as several species of apes and many rodents. The killing and capturing of game is restricted by Regulations in conformity with the provisions agreed upon by the Convention for the Preservation of Wild Animals, Birds and Fish in Africa.

The following is an extract from the Game Regulations in force in the Protectorate:—

The following licences may be granted by the Governor or such person or persons as may be authorised by the Governor, *viz.*:—

- (1). Licence "A." (2). Licence "B." (3). Licence "C."

The following fees shall be payable for licences, that is to say, for Licence A, 25*l.*, for Licence B, 4*l.*, for Licence C, 2*l.* Every licence shall expire on the 31st March, and no licence shall remain in force for more than 12 calendar months. Every licence shall bear in full the name of the person to whom it is granted, the date of issue, the period of its duration, and the signature of the Governor or other person authorised to grant licences. A licence is not transferable. All holders of licences are required, on the 31st March each year, to send in a return of all animals hunted, to the Resident of the District.

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## SCHEDULES.

(These Schedules may contain the names of some species or varieties not found, or only occasionally found, in Nyasaland).

### FIRST SCHEDULE.

Animals not to be hunted, killed, or captured by any person, except under Special Licence.

1. Giraffe.
2. Mountain Zebra.
3. Wild Ass.
4. White-tailed Gnu (*Connochætes gnu*).
5. Eland (*Taurotragus*).
6. Buffalo.
7. Elephant (female or young).
8. Vulture (any species).
9. Secretary-Bird.
10. Owl (any species).
11. Rhinoceros-Bird or Beef-eater *Buphaga* (any species).

## SECOND SCHEDULE.

Animals the females of which are not to be hunted, killed, or captured when accompanied by their young, and the young of which are not to be captured except under Special Licence.

1. Rhinoceros.
2. Hippopotamus.
3. Zebra (other than the Mountain Zebra).
4. Chevrotain (*Dorcatherium*).
5. All Antelopes or Gazelles not mentioned in the First Schedule.

## THIRD SCHEDULE.

Animals, limited numbers of which may be hunted, killed, or captured under Licence "A" only.

Kind.	Number allowed.
1. Elephant (male) ... ..	2
2. Rhinoceros ... ..	2
3. Wildebeest Gnu (except white tailed species) ... ..	6

## FOURTH SCHEDULE.

Animals, limited numbers of which may be hunted, killed, or captured under Licences, "A" & "B."

1. Hippopotamus ... ..	6
2. Zebras (other than the Mountain Zebra)	2
3. Antelopes and Gazelles— Class A—	
<i>Hippotragus</i> (Sable or Roan) ...	6
<i>Strepsiceros</i> (Kudu) ... ..	6
4. Colobi and other Fur-Monkeys...	6
5. Aard-Varks ( <i>Orycteropus</i> ) ... ..	2
6. Serval ... ..	2
7. Cheetah ( <i>Cynælurus</i> ) ... ..	2
8. Aard-Wolf ( <i>Proteles</i> ) ... ..	2
9. Smaller Monkeys of each species ...	2
10. Marabous ... ..	6
11. Egret ... ..	2
12. Antelopes and Gazelles— Class B—	
Any species other than those in Class A ... ..	15
13. Chevrotains ( <i>Dorcatherium</i> ) ... ..	10
14. Wild Pig of each species ... ..	10
15. Smaller Cats ... ..	10
16. Jackal of each species ... ..	10
17. Puku ( <i>Cobus vardonii</i> ) ... ..	2
18. Lechwe Waterbuck ( <i>Cobus lechwe</i> ) ...	2
19. Inyala ( <i>Tragelaphus angasi</i> ) ... ..	2

## FIFTH SCHEDULE.

Animals, limited numbers of which may be hunted, killed, or captured under Licences "A," "B," and "C."

1. Hippopotamus	...	...	...	...	6
2. Wart-Hog	...	...	...	...	6
3. Bush-Pig	...	...	...	...	6
4. The following	Antelopes and Gazelles				
only—					
Hartebeest	...	...	...	} 30 animals in all under 1 licence, made up of animals of a single species or of several.	
Impala	...	...	...		
Reedbuck	...	...	...		
Duiker	...	...	...		
Klipspringer	...	...	...		
Steinbuck	...	...	...		
Waterbuck	...	...	...		
Bushbuck	...	...	...		

The boundaries of the areas now retained as Game Reserves are as follows:—

## CENTRAL ANGONILAND RESERVE.

Commencing at the point on the Dedza-Lilongwe Road where this road is crossed by the Tete river (a tributary of the Lintipe river) the boundary shall be carried along the Tete river, up stream, to its source on the Anglo-Portuguese watershed; thence it shall be carried along the Anglo-Portuguese boundary in a westerly and northerly direction until it reaches the source of the Katete river (a tributary of the Lilongwe river) near Kazuzu peak on the Dzalanyama range of hills; thence it shall be carried along the Katete river, down stream, to its confluence with the Lilongwe river; thence it shall be carried along the Lilongwe river down stream until the Dedza-Lilongwe road is reached; thence it shall be carried along this Dedza-Lilongwe road in a south-easterly direction to the point of commencement.

## ELEPHANT MARSH RESERVE.

Commencing at a point on the left bank of the Shire river which point is 2 miles in a straight line, up stream, from the confluence of the Ruvo and Shire rivers, the boundary shall be carried along the left bank of the Shire river, up stream, for a distance, measured in a straight line, of 10 miles; thence it shall be carried in an easterly direction at right angles to the general direction of the Shire river boundary already described for a distance of 4 miles or until the Cholo foot hills wooded country is reached; thence it shall be carried along the edge of the wooded country in a southerly direction parallel to the general direction of the Shire river boundary already described, for a distance of 10 miles; thence it shall be carried in a westerly direction at right angles to the general direction of the Shire river boundary already described for a distance of 4 miles to the point of commencement.

Carnivora may be shot or killed anywhere in the Protectorate, whether in a Game Reserve or not, and no game licence is required for this purpose.

The best season for shooting is from August to November (the beginning of the rains) when the long grass is burnt and the game is not so scattered on account of the scarcity of water.

The amount of game of all sorts is thought to be on the increase, and native hunters who know the game and its favourite haunts are easily obtained.

The number of insects which, directly or indirectly, affect human beings is large. Of the former, Scorpions, large Centipedes, Tick (called by the Portuguese "Carapata,") and the Burrowing Flea, or "Jigger," are the greater pests, while Wasps, Mosquitoes, and Sandflies are also troublesome. The "Jigger" causes intense suffering if not detected in time, and a daily examination of the feet is recommended in all localities infested by it. The Mosquito is not found in the higher districts.

Other insects which indirectly affect human beings are the Locust which here, as elsewhere throughout Africa, causes damage to growing crops and vegetation; the Termite, or so-called White Ant, which attacks houses, wood-work, and trees; and Cockroaches and various kinds of ants which damage stores.

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Under "The Firearms and Ammunition Ordinance, 1908," the import of firearms or ammunition into the Protectorate by private persons is prohibited except under a Permit, which may be obtained from the Comptroller of Customs or the Resident of the District—Fee 2s. 6d. The sale, assignment or transfer of arms or ammunition within the Protectorate is similarly prohibited except under Permit, to be obtained from the Resident of the District. The fee to the seller is 6d. while the fee to the purchaser is 2s. 6d.

All possessors of arms and ammunition are required to make a return of such arms and ammunition to the nearest Resident on the 1st April in each year, stating number, description, &c.

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## WOODS AND FORESTS.

Throughout the Protectorate there are large tracts of well-timbered land, but forests containing timber of large dimensions are few, being confined chiefly to the mountain valleys and ravines. With the exception of the valuable Cypress forests, which are found on the plateaux and higher slopes of Mlanje Mountain, it may be said that the forest growth throughout the Protectorate consists chiefly of small hardwood trees and shrubs, which are of little value except for firewood and poles. Valuable hardwood trees of large dimensions are occasionally met with, but these are mostly confined to the banks of streams and rivers at an elevation varying from 1,500 to 3,500ft.

The most important of these hardwoods is the Mbawa or African Mahogany (*Khaya senegalensis*), a tree often attaining enormous dimensions, and producing excellent timber for furniture and general cabinet making. Mwenya (*Adina microcephala*) is another large-sized tree found sparsely scattered along the banks of streams and rivers. The timber produced by this tree is extremely hard and durable, and is seldom if ever attacked by white ants or borers.

The various other hardwoods which are known to yield useful timber, and which are found sparsely scattered throughout the country up to about 3,500ft., are:—

### *Vernacular Names.*

Mpingu  
Mlombwa  
Mpini  
Mwabvi  
Msopa  
Msuko  
Mpindimbi  
Nabukwi  
Mnyowe  
Balisa  
Njale  
Mkundi  
Maula  
Mkalate  
Bwemba  
Matowo  
Msichitsi

### *Botanical Names.*

*Diospyros* sp. (Ebony).  
*Pterocarpus angolensis*.  
*Terminalia serecia*.  
*Erythrophloeum guineense*.  
*Bridelia micrantha*.  
*Uapaca kirkiana*.  
*Vitex* sp.  
*Cordia abyssinica*.  
*Eugenia cordata*.  
*Pterocarpus* sp.  
*Artocarpus* sp.  
*Parkia filicoidea*.  
*Parinarum mobola*.  
*Burkea* sp.  
*Tamarindus indica*.  
*Dombeya spectabilis*.  
*Trichilia emetica*.

Of the various species of *Acacia* commonly met with on the plains at an elevation of from 2,000 to 2,500 ft. the most important are *Acacia arabica*, *Acacia farnesiana* and *Acacia suma*. The bark and seed-pods of *Acacia arabica* and *Acacia suma* contain a high percentage of tannin, and are therefore useful for tanning purposes. The round yellow heads of *Acacia farnesiana* constitute the Cassie flowers so much used in European perfumery. In certain parts of Europe, where this tree is cultivated, a full grown tree is calculated to yield annually 2 lbs. weight of



*Photo by E. S. England.*

**CYPRESS FORESTS, MLANJE PLATEAU.**



flowers, valued at from 3d. to 4d. a lb., an acre under Cassia cultivation in Europe giving about 3,000 lbs. of flowers annually when in full bearing. These three species of acacia also yield a valuable gum.

The Tamarind (*Tamarindus indica*) and Baobab (*Adansonia digitata*) are often seen on the plains up to an elevation of about 2,500 ft. The fruit of the tamarind is largely eaten by natives; the pulp of the fruit makes a pleasant cooling drink when mixed with sugar and water.

The Baobab tree is one of the largest and longest-lived trees in the world. The mucilaginous pulp of the baobab fruit, which has a pleasant, cool, subacid taste, like cream of tartar, is used by natives in cases of diarrhoea and dysentery. From the bark of the tree a strong useful fibre is obtained.

Mjombo (*Brachystegia* sp.), Nangwesu (*Brachystegia longifolia*) and Mchenga (*Brachystegia spicaformis*) are all medium sized trees commonly met with throughout the Shire Highlands up to 5,000 ft., from the fibrous bark of which the natives make bark-cloth and strong bark-rope.

Mvunguti (*Kigelia pinnata*), a tree from 15 to 30 ft. high, is fairly common throughout the Protectorate; it is known to Europeans as the "Sausage tree" owing to its fruit somewhat resembling a huge sausage. The seeds are roasted and eaten by natives in times of scarcity.

In hilly country a very conspicuous tree is Mpevu (*Trema bracteolata*), a low spreading evergreen better known to Europeans as the "Charcoal tree" and which affords excellent shade. It is an exceedingly fast grower, but the wood is soft and light and therefore of little use except for fuel.

Of the several species of *Ficus* indigenous to the country the following are commonly met with:—Mkuyu (*Ficus sycomorus*), Mpumbe (*Ficus* sp.), and Mchere (*Ficus* sp.).

Mkuyu is a medium sized tree usually met with on the lower slopes of the hills and on the banks of streams. The fruit is about the size of a crab-apple, reddish in colour when ripe, and is borne in clusters on the old wood.

Mpumbe is a large spreading tree mostly found near streams, with fruit about the size of the ordinary fig of commerce.

Mchere is a low spreading tree with small leaves, occasionally met with on high ground. The fruit of this species is very small, being only about the size of a pea.

Several species of *Trichilia* occur at various elevations up to about 3,000 feet above sea level. In certain parts of the Upper Shire and North Nyasa districts, *Trichilia emetica* (Natal mahogany) is fairly abundant at an altitude of about 1,300 feet. The seeds, or nuts, of this tree, which are produced in abundance, contain a large percentage of oil. *Trichilia emetica* is found in various parts of Africa; from Portuguese East Africa the nuts of this species are exported to Marseilles, where they sell at



about £8 a ton. The oil or fat from these nuts is used in the manufacture of soap, candles, &c.

The only coniferous trees indigenous to the country are *Widdringtonia Whytei* (Mlanje Cypress), *Podocarpus milanjanus* (Yellow-wood of South Africa), and *Juniperus procera* (Uganda Juniper). Of these the Mlanje Cypress is the most valuable, the timber being of excellent quality, durable and impervious to white ants. It is found only on the higher slopes and plateaux of the Mlanje mountain, where it is fairly abundant at an elevation varying from 4,000 to 7,000 ft. above sea level. The tree grows to a large size, and the timber is extensively used by the Public Works Department for building and various purposes.

From the wood of the Mlanje Cypress a thin, dark-coloured oil is obtained by destructive distillation. This oil, which has been locally designated "Mlanje tar," is a valuable wood preservative against white ants.

*Podocarpus milanjanus* is found sparsely scattered on the mountain plateaux at an altitude of from 4,000 to 7,000 ft.

*Juniperus procera* is rare, a few specimens only having been seen on the Nyika plateau.

In certain localities palms are fairly abundant, the following species having so far been described as indigenous to the country:—*Borassus flabellifer*, var. *Aethiopum*, *Hyphaene crinata*, *Raphia vinifera*, *Phoenix reclinata* and *Elaeis guineensis*. *Borassus* and *Hyphaene* are plentiful on the banks of the Lower Shire river near Chiromo, and in the vicinity of Lake Nyasa. The *Hyphaene* is also occasionally met with on the upland plains at an elevation of about 2,500 ft. The fermented juice of the *Hyphaene* palm, which is very intoxicating, is much relished by the natives.

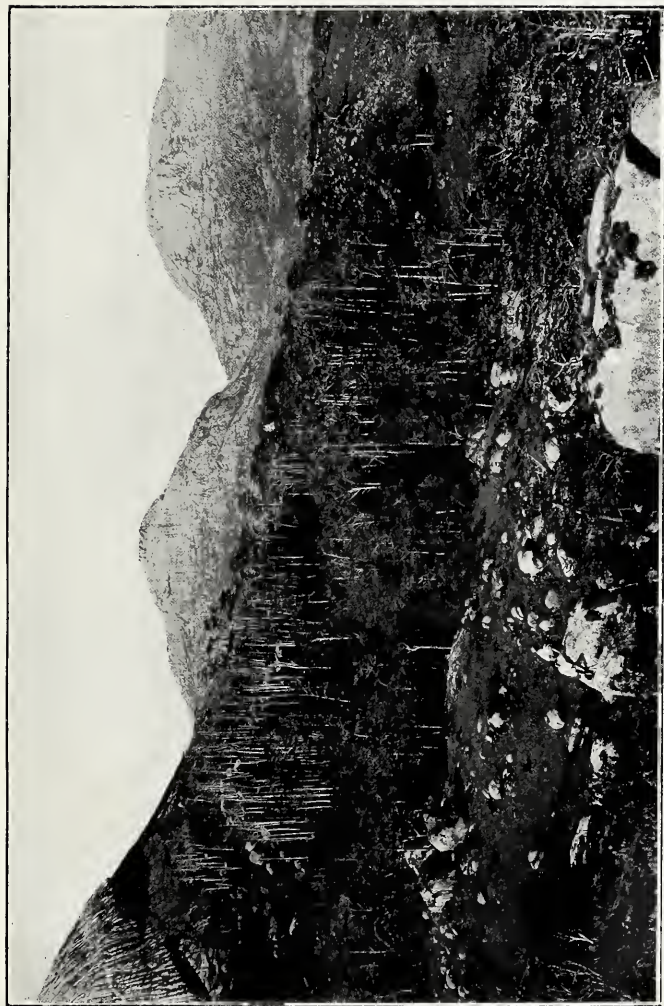
The *Raphia* Palm is chiefly found growing near streams at an elevation varying from 2,000 to 2,500 feet.

The *Phoenix* or Wild Date Palm is usually found growing in clumps in the swamps on the plains at an elevation of about 2,500 ft.; it is also frequently seen near streams on the slopes of the mountains up to about 4,000 ft. above sea level.

The African Oil Palm (*Elaeis guineensis*) which is the source of the commercial palm oil, one of the most important articles of export from West Africa, is found on the north-west shore of Lake Nyasa.

In certain parts of the Protectorate bamboos (*Oxytenanthera* sp.) are abundant. Another species of bamboo, with stems attaining a height of from 20 to 40 ft. and about 4 inches in diameter, is occasionally met with on the lower slopes of the hills at an elevation of about 3,000 feet.

The useful yellow and green striped bamboo (*Bambusa vulgaris*), which is said to be a native of Ceylon, has been introduced into the country, and is now growing well in various parts of the Protectorate.



*Photo by E. S. England.*

**CYPRESS FORESTS, MLANJE PLATEAU.**



Of the several species of rubber-yielding *Landolphas* which are found on the banks of streams and rivers, and in the moister patches of forests at various elevations up to 3,000 ft., the most valuable is *Landolphia Kirkii* which produces the best rubber.

The *Landolphas* having been tapped in a careless manner by natives in the past, healthy old vines are now rarely seen. Young vines, however, are fairly abundant, as the ruthless methods of tapping employed by the natives do not kill the plant outright, but only the stem or vine, the roots of which continue to throw up young shoots.

The native method of tapping the *Landolphia* is simple though somewhat tedious, and is as follows:—

A slice of bark, some 2 or 3 inches long, is taken off with a knife, and as the latex exudes from the cut it is wiped off with the fingers and rubbed on the arm of the operator, where it coagulates almost immediately. The thin film of rubber is then peeled off the arm and forms the nucleus of a ball of rubber. This is applied to each new cut, and being turned with a rotary motion the coagulated latex is wound off like silk from a cocoon.

When all the rubber has been extracted from a vine the native naturally turns his attention to its roots, from which he procures what is known as root-rubber. The method of collecting rubber from the roots of the *Landolphia* is as follows:—

The soil is dug away from the base of the vine and the root system thus exposed to view. Only the larger sized roots are selected, and when these have been cut off the remaining rootlets of the vine are covered over again with soil. The bark is then removed from the selected roots, and after being well saturated with water it is pounded into a soft mass. This mass of pounded root-bark is now placed in a large native pot, which has been half-filled with water and placed on a large fire beforehand. The boiling process usually lasts about an hour or so, but the native knows when boiling operations should cease by simply lifting out of the pot occasionally a cupful of the boiling liquid and pouring it into a bucket of cold water. When sufficiently boiled the rubber suspended in the boiling liquid at once coagulates when placed in cold water, and little particles of rubber may be seen floating on the surface. When this stage in the process has been reached the pot is immediately removed from the fire, and the whole of the contents poured into a bucket of cold water. The small particles of coagulated rubber, which almost immediately appear floating on the surface of the cool water, are carefully collected and at once washed in the nearest stream. After having been thoroughly washed the rubber is dipped in hot water so as to make it soft and pliable, in which state it is more easily kneaded into the usual form of a ball.

The collecting of rubber from the roots of *Landolphas* is prohibited in the Protectorate, as it was found that the mutilating of the roots of the vine by native collectors invariably killed the plant outright.



It is comparatively easy to distinguish between root rubber of the *Landolphia* and the rubber obtained from the vine when offered for sale by natives, as the former is always kneaded into the form of a ball whereas the rubber from the stem of the plant is wound into balls.

The genus *Strophanthus* is represented by at least three species, namely, *Strophanthus Kombe*, *Strophanthus ecaudatus*, and *Strophanthus Courmontii*; of these the most important is *Strophanthus Kombe* which produces the best seed, large quantities of which are yearly exported to Europe for medicinal purposes, being chiefly used for the treatment of cardiac affections. *Strophanthus Kombe* is rarely met with at a greater altitude than 1,500 ft., and is abundant in that part of the Chikwawa district known as Chief William's country.

*Strophanthus Courmontii* ascends to a higher altitude, being very common on the banks of the Palombe river at an elevation of about 2,500 ft.

Of the many fibre-yielding plants commonly met with, the *Sansevierias*, which produce the well-known Bowstring hemp of commerce, are the most important; *Sansevieria Kirkii* is abundant on the dry slopes of the hills in certain localities up to about 3,000 ft. above sea level. Fibre of good quality, which is used by the natives for various purposes, is also obtained from *Dzenje* (*Sida rhombifolia*), *Buaze* (*Securidaca longipedunculata*), *Nsonongwa* (*Triumfetta rhomboidea*), and *Lichopwa* (*Pouzolzia hypoleuca*) these plants being very common throughout the country.

The genus *Indigofera*, represented by about a score of species, is extremely common, being found up to an elevation of about 6,000 ft. Of the various species indigenous to this country the most valuable is *Indigofera arrecta*, which has been proved to be the richest yielder of the valuable indigo dye.

A large variety of exotic timber trees has been tried at Zomba during the past 12 years, and among those which have done well so far the following may be mentioned:—

<i>Common Name.</i>	<i>Botanical Name.</i>
White Ironbark	<i>Eucalyptus paniculata</i> .
Red-flowering Ironbark	<i>Euc. sideroxylon</i> .
Grey Ironbark	<i>Euc. punctata</i> .
Woolly Butt	<i>Euc. longifolia</i> .
Murray Red Gum	<i>Euc. rostrata</i> .
Citron Scented Gum	<i>Euc. citriodora</i> .
Flooded Gum	<i>Euc. saligna</i> .
Red Gum	<i>Euc. teriticornis</i> .
Gully Ash	<i>Euc. Smithii</i> .
True Mahogany	<i>Swietenia mahogoni</i> .
West Indian Cedar	<i>Cedrela odorata</i> .
East India Walnut	<i>Albizia Lebbek</i> .
Silky Oak	<i>Grevillea robusta</i> .
Mimosa-leaved Jacaranda	<i>Jacaranda mimosaeifolia</i> .

<i>Common Name.</i>	<i>Botanical Name.</i>
Red Sandal Wood	<i>Adenanthera pavonina.</i>
Black Wattle	<i>Acacia mollissima.</i>
Pycnantha Wattle	<i>Acacia pycnantha.</i>
Silver Wattle	<i>Acacia dealbata.</i>
Pencil Cedar	<i>Juniperus virginiana.</i>
Norfolk Island Pine	<i>Araucaria excelsa.</i>
Kauri Pine	<i>Dammara australis.</i>
American Arbor-vitae	<i>Thuja occidentalis.</i>
Chinese Arbor-vitae	<i>Thuja orientalis.</i>
Weeping Cypress	<i>Cupressus funebris.</i>
Monterey Cypress	„ <i>macrocarpa.</i>
Yellow Cedar	„ <i>nootkatensis.</i>
Upright Cypress	„ <i>sempervirens.</i>
Twisted Cypress	„ <i>torulosa.</i>

The trees chiefly used by the Forestry Department for afforestation purposes are *Eucalyptus paniculata*, *Euc. longifolia*, *Euc. rostrata*, *Euc. teriticornis*, *Euc. saligna*, Mlanje Cypress, and Mbawa or African Mahogany.

The various species of *Eucalyptus* enumerated above, with the exception of *Euc. Smithii*, all yield timber of great strength and durability, suitable for wagon-work, sleepers, furniture, house finishings, bridge-building and fuel.

The time to sow *Eucalyptus* seed varies somewhat with the locality, but throughout the Shire Highlands the seed should be sown about the end of August, so that the plants may be just large enough to plant out the following rainy season.

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# TIMBER AND FIREWOOD TARIFF AND RULES.

The following is the list of Royalties for Timber and Firewood cut on Crown Lands:—

## (A)

	<i>s.</i>	<i>d.</i>
Mpingu (Ebony), per cubic foot ... ..	1	0
Mbawa (African Mahogany), per cubic foot ... ..	0	6
Mbawa; dead trees, per cubic foot ... ..	0	3
Mkungusi (Mlanje Cypress), per cubic foot ... ..	0	4
Mwabvi, Mng'wenya, Mlombwa, Msopa, Mpindimbi, Nabukwi, Balisa and Nyonyo, per cubic foot ... ..	0	3
Other kinds of indigenous trees, per cubic foot ... ..	0	2
Poles, full length, up to 4 inches diameter at base, each ... ..	0	4
Poles, full length, up to 7 inches diameter at base, each ... ..	0	8
Poles, full length, up to 9 inches diameter at base, each ... ..	1	0
Bamboos, full length, up to $2\frac{1}{4}$ inches diameter at base, each ... ..	0	$0\frac{1}{2}$
Bamboos, full length, over $2\frac{1}{4}$ inches diameter at base, each ... ..	0	2

## (B)

Firewood, unsuitable for poles or sawyers' timber, from Crown Forests in the Lower Shire, Ruo, Mlanje, Blantyre, West Shire and Zomba Districts, per cubic yard, stacked ... ..	1	0
Firewood, from Crown Forests in other Districts, per cubic yard, stacked ... ..	0	6

Arrangements can be made with the Residents of the Lake Districts for supplies of Steamer Fuel at 1/6 per cubic yard, inclusive of the Royalty, provided applications are received not later than 30th April of each year.

2. No timber or other wood cut on lands leased from the Government can be sold unless a Royalty in accordance with the above tariff has been paid to the Government.

3. Dead trees only may be cut within 30 yards of any stream or river, or within 8 yards of any main road.

4. Purchasers under the above tariff must satisfy themselves in all respects before purchase, and no complaint will be entertained after the sale is complete.

5. Permits for cutting timber or firewood in Crown Forests in the Zomba, Blantyre and Mlanje Districts may be obtained from the Director of Agriculture, Zomba.

6. Permits for cutting timber or firewood in other Districts may be obtained from the Resident of the District.

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### Exemptions.

1. Bamboos and poles required by planters for structures necessary to Tobacco curing.

2. Poles, bamboos and firewood required by Natives for domestic use only.

3. Firewood for household purposes, subject to the following Rules:—

- (1). A Wood-cutting Fee of 12/- per quarter, paid in advance, will be charged to all European, American or Asiatic residents in the Protectorate, whether residing in Townships or not, who obtain their firewood for household purposes from Crown Lands.
  - (2). Applications for permission to cut firewood for household purposes must be made to the Resident of the District.
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## POPULATION.

31st March, 1909.

District.	Area in Square Miles.	European.		Asiatic.		Native.		Totals.		Total Popula- tion.	Aliens.	Popula- tion to the Square Mile.	Europeans only.		
		European.		Asiatic.		Native.		Totals.					Persons employed in		
		Males.	Fe- males.	Males.	Fe- males.	Males.	Females.	Males.	Females.				Agric.	Manf.	Com.
Lower Shire	671	21	1	42	1	10,500	11,302	10,563	11,304	21,867	...	32.59	2	...	13
Ruo ...	1,772	24	2	55	1	8,339	9,105	8,418	9,108	17,526	...	9.89	3	4	9
West Shire ...	1,791	16	2	4	...	8,888	10,154	8,908	10,156	19,064	...	10.64	8	...	1
Blantyre ...	1,635	171	76	184	6	47,100	53,796	47,455	53,878	101,333	...	61.98	49	11	70
Mlanje ...	1,674	10	4	2	...	25,300	28,000	25,312	28,004	53,316	...	31.85	6	...	...
Zomba ...	1,975	68	27	113	...	22,300	34,800	22,481	34,827	57,308	...	29.02	11	...	3
Upper Shire	3,050	23	12	13	...	37,877	47,347	37,913	47,359	85,272	...	27.96	7	...	...
South Nyasa	3,712	25	6	18	...	33,611	40,772	33,654	40,778	74,432	4	20.05	1	...	7
C. Angoniland	6,818	36	13	12	...	150,000	190,500	150,048	190,513	340,561	...	49.95	1	...	4
Marimba ...	5,467	7	6	3	...	18,222	36,444	18,232	36,450	54,682	...	10.	...	...	2
West Nyasa	4,086	8	...	1	...	15,193	20,245	15,202	20,245	35,447	...	8.67	3	...	1
Mombasa ...	6,623	11	6	2	...	43,900	65,300	43,913	65,306	109,219	...	16.05	...	...	2
North Nyasa	4,334	15	4	...	...	12,470	14,701	12,485	14,705	27,190	...	6.72	2	...	2
Totals ...	43,608	435	159	449	8	433,700	562,466	434,584	562,633	997,217	4	22.87	93	15	114
		594		457		996,166		997,217							



## DISTRIBUTION OF NATIVE TRIBES.†

The native races dwelling in Nyasaland belong to Bantu-Negro stock, with, in some cases, an intermixture of a former Bushman-Hottentot type.

This stock is sub-divided by Sir H. H. Johnston into 10 groups, of which the following are represented in the Protectorate:—

1. Awa-Nkonde. Embracing the tribes on the northern and north-western coast of Lake Nyasa.

2. Anyanja. A large and important group, of which the chief components are the Atonga, Achewa and Ahenga, inhabiting the south-western, southern and eastern coasts of Nyasa, the Shire Highlands, Mlanje, Shirwa, and the lower and western Shire districts.

3. Alolo and Anguru. Represented by sections in the Mlanje and Blantyre districts, which are increasing through immigration from Portuguese territory.

4. Yao. This group is not indigenous, but came originally from the coast, and settled during the last century among the Anyanja tribes in the Shire Highlands, on the south-eastern coast of Nyasa, and at one or two places on the south-western shore of the lake.

The Angoni in the south-west are relics of former Zulu invasions, and the name of the Makololo on the Lower Shire is derived from some Bechuanas of the Upper Zambesi who were introduced by Livingstone and became petty chiefs and headmen, and whose tribal designation was adopted by their followers.

On the north-west border of the Protectorate is found a portion of the large Awemba group, also derived from the Bantu-Negro stock.

Both in physical and in mental qualities the Yao excel all other tribes. They are a well-built, athletic race, good and brave soldiers, sturdy carriers, and show the greatest capability for learning various trades and crafts. They are also good cultivators, and make useful servants.

Next to the Yao come the Atonga, who from the first have been friendly disposed to the European; they are docile, and fairly intelligent, and are good soldiers, carriers and boatmen.

The Wankonde are chiefly devoted to pastoral pursuits, and are large cattle owners, while the Angoni, though also keeping cattle, are more given to agriculture.

The Achikunda on the Lower Shire are, like the Atonga, useful boatmen.

Carriers are obtained from the Yao, Atonga, Anguru, Angoni and Alolo, the first two being the best. The average load is from 45 to 65 lbs., and average distance covered in a day, 20 miles.

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† A full account of these tribes is given in Sir H. H. Johnston's "Nyasaland," page 389, *et seq.*

*Languages.* The principal languages in use in Nyasaland and the adjoining districts are Swahili, Yao and Chinyanja. The last mentioned is in almost universal use in the Protectorate, and is generally understood by most of the native tribes.

## Tribal Notes.

### Shire Highlands.

1. The Anyanja proper (Amang'anja) are the aboriginal people of these highlands. Upon the incursion of the Yao from the north the Anyanja withdrew, chiefly into the southern portion of what is now Mlanje district and into the neighbourhood of Cholo, where they are still numerically predominant. They have, however, spread again by intermarriage and peaceful settlement over a great part of the Shire Highlands generally, and are to be found almost everywhere living side by side with the Yao and other tribes.

The first paramount chief of the Anyanja of whom we possess any knowledge was Kapwiti, who had his headquarters west of the Shire river, in the country which was marked on the old maps as "Maravi" (Ambu-land?).

A branch of the ancient inhabitants of that region, calling themselves Ambu-Anyanja, is now settled in the Likabula valley, in Blantyre district, under their chief Kundembwi. With the possible exception of the Yaos the Anyanja are still the most numerous tribe in the Shire Highlands, and their language, Chinyanja, remains the principal dialect of the country, being also much more commonly employed by Europeans than any other native tongue.

Less enterprising than the Yaos the Anyanja nevertheless exhibit a very fair measure of intelligence which, in some individual cases, fully reaches the standard of the best type of Yaos. They are for the most part a remarkably docile and contented race and, politically, have caused less trouble than almost any other tribe. Physically the Anyanja do not compare very favourably with the Yaos or Angoni or with people like the Atonga of West Nyasa, but they are superior, on the other hand, to the Anguru and the various mongrel Angoni class.

The tribal marks of the Anyanja proper are four small perpendicular incisions, behind the eyes, from  $\frac{1}{2}$  to  $\frac{1}{4}$  of an inch in length. The Ambu branch of this class (Ambu-Anyanja) is distinguished by a separate mark, a long cut, curving across the forehead from temple to temple, the ends being sometimes produced downwards to meet at the chin.

The pelele or lip-ring, a circular piece of bone or wood inserted in the upper lip, was a well known fashion—it can hardly be called an ornament—of the Anyanja women, but is now rapidly falling into disuse.

2. *Yaos*. (Ajawa) including the so-called Amachinga Yaos and the Yaos of Mangoche. This intelligent and hardy race came originally from the south-east and east of Nyasa. Driven thence by the Angoni, the Yaos moved southwards, and, in their turn, attacked the aboriginal Anyanja, whom they dispossessed of a great part of the Shire Highlands.

The obstinate and turbulent character of the Yaos gave much trouble to the British Administration for several years after the founding of the Protectorate, and necessitated a number of punitive expeditions against the more prominent Yao robbers and slave-raiders such as Matipwiri, Chikumbu and Tiramanja in Mlanje district, Kawinga in the district of Zomba, Liwonde on the Upper Shire, and Mponda, Makanjira and others in South Nyasa. Once subdued, however, this predatory people, as often happens, became our most active and useful allies. They have since done excellent service both as soldiers in our regular native battalions, as civil police, and in all departments of skilled labour. Generally speaking the character of the Yaos is somewhat peculiar and is marked by a certain stubbornness and vanity which makes them not always so easy to control as other tribes. They are comparatively cleanly in their habits, and their intelligence is considerable. Physically also they are well endowed, and are capable of great exhibitions of activity and endurance.

It is worthy of remark that the Yaos particularly affect the Mahommedan religion. It may be that this tendency is a relic of their former association with the Arab slave traders, who came a great deal into contact with the Yao chiefs.

Facial marks, etc. The tribal marks of the Yaos are four small horizontal cuts on the forehead or behind the eyes, about  $\frac{1}{8}$  to  $\frac{1}{4}$  of an inch in length. The nose-button, a small disc of bone or metal (nearly always burnished lead), was a distinctive ornament of the Yao women, and is still much worn by them.

3. *Anguru*—including the Anguru of Bisa, and the so-called Alolo Anguru. These people chiefly inhabit the eastern confines of the Shire Highlands, especially the Portuguese territory east of Mlanje and the eastern shores of Lake Shirwa, from which neighbourhoods, however, they are now moving very largely into the Protectorate. The Anguru are naturally a wild and low-caste race, whose ignorance makes them at once savage and timid. The immigrant Anguru rarely or never form communities of their own when settling in British territory, but prefer to attach themselves to prominent Yao or Anyanja chiefs, in return for whose protection they usually perform a certain amount of menial labour. The status of these Anguru strangers in a Yao or Anyanja village is somewhat peculiar. They are often described by other natives, and indeed describe themselves, as "akapolo" (slaves), a misleading term, however, in this case since their personal rights and liberties are hardly ever curtailed to any oppressive degree, although their racial inferiority causes them to be held in some measure of contempt and relegates them

naturally to an inferior position as compared with more intelligent tribes. Anguru are largely employed by Europeans as carriers and for casual field labour—very rarely on the other hand in more responsible occupations. The disposition of this people is in a high degree thriftless and nomadic, and they are in the habit of constantly shifting their habitations (*ku samuka*) either in order to evade payment of hut tax or from natural restlessness. Unlike other natives, who can usually speak at least two or three different local dialects, the majority of Anguru are scarcely able to make themselves understood in any other tongue but their own. Their physique for the most part is poor, and they are often badly nourished, being so improvident that they will frequently neglect to cultivate even the small area of ground necessary to supply them with food. Partly in consequence they are much addicted to thieving, and especially to prædial larceny. In spite of their natural defects, however, the Anguru are not altogether unresponsive to the influences of good government. If their confidence can once be gained and if they are kept under steady control they often exhibit a decided improvement.

Facial markings. The tribal marks of the Anguru are various and probably often quite arbitrary, but usually include a cluster of small incisions on the forehead. The Alolo Anguru are distinguished by a wide crescent shaped mark running from temple to temple, the ends depressed, much resembling the mark of the Ambu-Anyanja. The Anguru of Bisa have the same tribal mark as the Yaos. This branch arose from a crossing of the aboriginal Anguru with the Machinga Yaos, many of whom settled at Bisa (on the east side of Mlanje) after being driven from Machinga-land by the Angoni.

The Anguru of Bisa are vain of their Yao blood and call themselves "Amachinga," but other natives always class them as Anguru.

4. *Angoni*. Very few true Angoni are settled anywhere in the Shire Highlands, and probably the only chief of genuine Angoni descent who has been long resident there is Vumbwi, who has a large village near Mpezo, between Blantyre and Cholo. The character of the original Angoni-Zulus was marked by great boldness and even ferocity, and by a certain pride of race, or at any rate a lively sense of their superiority to neighbouring tribes. But their features have since undergone considerable modification owing to the admixture of inferior blood and the enervating effects of enforced peacefulness on a people whose natural avocation was that of predatory warfare.

Although this tribe is hardly represented in any permanent sense in the Shire Highlands their name is very familiar in that neighbourhood, owing to the large numbers of bastard Angoni who now come every year to Blantyre and elsewhere in search of casual employment. These people, bred from former unions between the Angoni-Zulus and their slaves, exhibit none of the



martial characteristics of the true Angoni, and are in every way a servile and inferior race, closely approximating in many respects to the Anguru. Nevertheless they habitually call themselves Angoni, and so the name of that enterprising and warlike tribe, which was for years a terror to the whole of Nyasaland, has fallen into much contempt in the Shire districts. The Achipeta-Angoni, one of the bastard class above mentioned, have a single influential representative in the Shire Highlands in the person of Kalindankôo, a remarkable man, whose character partakes much more nearly of the genuine Angoni type than is usual with members of his tribe. Like most of his fellow clansmen, Kalindankôo was formerly brother of Chikusi, by whom he was sold to the Yao Chikumbu. Taking refuge thereafter with the Makololo leader Kasisi, Kalindankôo, by his courage and address, so much ingratiated himself with his protector that he was proclaimed sub-chief of Mpemba and finally chief of the whole Likabula valley, where he still exercises considerable influence.

The tribal marks of the Angoni are two parallel lines running longitudinally from the ends of the eyebrows to near the ears. The various class of bastard Angoni sometimes adopt these tribal marks, sometimes others, but seem to have no sign peculiar to themselves.

5. *Achikunda*. These people properly belong to the Lower Shire river, but a few Chikunda villages are to be met with in the Shire Highlands. The Achikunda have the reputation of being excellent boatmen, and are largely employed in that capacity.

The tribal marks of the Achikunda are four horizontal incisions, in pairs, between the ears and eyes.

6. *Makua*. This group comes from Portuguese territory east of Mlanje, and of Lake Nyasa. The Makua have a wide range between these points and the coast, but are hardly to be found in the Shire Highlands except in a few parts of the Mlanje district. They are said to be good fighting men, and the tribe battled with considerable success against the Mangwangwara Angoni who formerly laid waste a great part of their country.

Their tribal marks consist of a number of long and deep perpendicular gashes, arranged in a row across the forehead.

7. *Makololo*. There are many villages in the Shire valley and on the western slopes of the Shire Highlands, the inhabitants of which describe themselves as Makololo. But in every case these people are really Anyanja. The original Makololo were the personal followers of Livingstone, whom he brought with him into Nyasaland from the south, and were far too few in numbers to establish themselves as a separate tribe. Being a superior stock, however, many of them easily succeeded in assuming dominion over different groups of the local Anyanja, and these, adopting the name of their rulers, transmitted it to their descendants who now inhabit the so-called Makololo villages of the Shire.



## Notes on the Native History of the Shire Highlands.

Nearly all the migrations of the Yao and Anyanja people during the generations which directly preceded the founding of the British Protectorate in Nyasaland may be traced to the aggression of the Angoni-Zulus.

These Angoni were originally included in the great Zulu confederation formed in South Africa by Chaka, and were driven therefrom by the hostility of that chief during the first half of the 19th century (probably about 1825). After their expulsion from Zululand the Angoni marched northwards under the leadership of Zongindaba (Zwankinaba) and, crossing the Zambesi, traversed what is now Rhodesia until they penetrated at last into the heart of the Nyasa-Tanganyika region. These wanderings occupied a great many years, and it would be impossible to describe here in detail even the little that is known about them. Zongindaba died in what is called the Fipa country near the south end of Lake Tanganyika, and upon his death the Angoni broke into several different clans which eventually dispersed in various directions. One of these clans eventually moved round to the east of Lake Nyasa, and under their chief Mputa attacked the Makua of that region and the Yaos of Machinga-land. In the fighting which followed Mputa was killed but was succeeded by Chidiaonga, who soon drove out the Machinga Yaos, after them their neighbours, and the Yaos of Mangoche. These, retreating towards the south, pressed, in their turn, upon the Anyanja of the Shire Highlands, who thereupon fell back into the districts of Cholo and Mlanje.

The Angoni, who had caused all the disturbance, finally crossed the Shire and made their way into the hill country of Domwe, where they permanently settled under Chikusi, the brother and successor of Chidiaonga.

The Yao exodus to the south, which had been brought about as described, took place in three divisions. The first of these was under the command of Mkata, Malunga and Matenji who settled in the neighbourhood of Ndirandi hill near where Blantyre now stands, having dispossessed the aboriginal Anyanja there, with the help of Kapeni, who followed them, and who afterwards moved on to Sochi where his nephew, the present Kapeni, still resides as paramount chief. In the track of Kapeni came Malika and Kumpama, who settled at Chiradzulu. Kumpama died many years ago, Malika as lately as June, 1907, but both have been succeeded (according to the Yao custom) by their nephews who continue to rule in the same names.

The second division of the fugitive Yaos, under Matapwiri, Kaduya and Tiranmanja, who were afterwards joined by Chikunda, entered the Shire Highlands by way of the shores of Lake Shirwa, and settled, first of all, at the northern end of Mlanje, whence they eventually spread into the Tuchila valley. They were comparatively few in numbers, but acquired a good deal of

importance owing to their position, which commanded the slave-route to Quelimane. Chikunda, Matapwiri and Tiramanja, all fought against Sir Harry Johnston's Administration and were in consequence temporarily banished from their homes. Tiramanja died soon afterwards, and was succeeded by his nephew the present Tiramanja. Old Chikunda and Matapwiri are still alive, and exercise a good deal of influence, which, however, they no longer attempt to use against the British Government.

The third Yao division led by the chiefs Mangwatu, Kanjowi (both afterwards killed in the Angoni raid upon Chimvoo), Lundu and others, established themselves on the Lunjisi river, between Matope and Blantyre. They were the most numerous and important group of the Yao people, and were frequently called upon to help their fellow tribesmen in the Blantyre hills. The date of the Yao exodus from South Nyasa into the Shire district was about 1855.

It was during the troubled times which followed this event that Livingstone passed through the Shire Highlands, and left behind him a number of his Makololo followers. These Makololo being naturally superior to the local natives, enjoyed the additional prestige of having been the personal adherents of the great explorer, and they were also rendered formidable by the possession of some guns and ammunition which Livingstone had given them. They settled in the Shire valley, in the territory of Chibisa, Mankokwe and others, which had been devastated a little earlier by the plague and famine of 1863. Here, under their chief Kasisi, they soon acquired considerable importance, and their villages became a common refuge for the hunted Anyanja of the hills, who were being pressed back further and further by the continued advance of the Yaos. The cause of these unfortunate Anyanja was warmly espoused by the Universities Mission of the Anglican Church, which tried about this time to form a settlement at Magomero between Blantyre and Zomba. But the attempt failed, and after many vicissitudes the Mission was forced to withdraw, leaving a free field to the Yaos. These, however, were themselves not destined to remain long undisturbed. About the year 1875 the Angoni began to renew their aggressions. A succession of desultory raids were made by them during the following years upon the nearest of the Yao villages which had been formed in the highlands, and at last, in 1880, a large Angoni impi crossed the Shire and totally annihilated the flourishing Yao settlement in the Mvoo Marsh (Chimvoo) in what is now the northern extremity of Blantyre district. Many natives still living can remember and describe this raid, which resulted in the death of two well-known Yao leaders, Kanjowe and Mwangwatu, and struck a panic into the whole neighbourhood.

The Makololo chief Kasisi, already mentioned, seems to have had sufficient foresight to perceive that these attacks if not

checked must sooner or later threaten the safety of his own territory. He accordingly formed the design of interposing a barrier between himself and the Angoni by establishing a chain of fortified villages along the left bank of the Shire, to guard the fords there. Some of the headmen sent by Kasisi to carry out this plan were his own Makololo (Mlaule for instance), but the majority were Anyanja who had previously taken refuge with him. Among the latter were Gwaza and Mpimbi, who occupied the country above Matope, and Chegaru who formed his village some miles further southward, near the Pampina rapids.

Shortly after this, in 1884, the Yao chief Malemya of Zomba, being reduced to great straits by some of his rebellious subjects, took the desperate step of appealing for help to the Angoni who accordingly advanced again to the Shire with the intention of crossing it. Thanks, however, to Kasisi's precaution they found all the forts commanded by strong Anyanja out-posts, and not venturing to attempt a passage in face of this opposition their leader Nyamuka sent messengers to treat with Gwaza. The latter received a large bribe in cloth and a promise was given that, if the Angoni were permitted to cross the river, they would pass on at once to the hills beyond, without molesting any of the Anyanja villages on the banks. Otherwise Nyamuka threatened to force the passage of the Shire at all hazards, and to utterly destroy the settlements formed there by Kasisi.

These representations won over Gwaza. Whether Kasisi was induced to give his assent also is not known, but it is certain that an arrangement was concluded between Gwaza's Anyanja and Nyamuka's army. The former withdrew from the fords, and the Angoni pouring across the river in immense numbers swept on towards the Zomba hills.

It was thought that, according to their usual habits, the invaders would not penetrate to any great distance, but would turn back after the loot of the Zomba villages. In this instance, however, they acted otherwise, and the attack on Zomba proved to be merely a preliminary to the most destructive raid that has ever been known in the Shire Highlands.

Nyamuka's army, after halting for a short time in the neighbourhood of Zomba, suddenly moved in two divisions towards Chiradzulu, the advance guard being composed of men in the vigour of youth, whose orders were to press on at full speed and paralyse resistance by their rapidity, leaving the main army to follow in their wake and complete the work of destruction. It is said that these young warriors attacked with such impetuosity that they reached Malabvi (near the present Blantyre-Mlanje road) on the evening of the same day on which they left Zomba—a distance of thirty-five miles. Their main army followed them as arranged, passing round the east side of Chiradzulu and devastating the whole country as far as Ndirandi hill, when they were checked by the intercession of the few Europeans then living at Blantyre. Some Missionaries are said to have

gone to Malabvi and remonstrated with the Angoni advance guard at that place, while Mr. John Moir rode out to meet Nyamuka himself. It is very doubtful whether this gallant action would have succeeded in its object but that the Angoni were by that time far from their homes, exhausted by marching and fighting and laden with plunder.

However that may be they certainly did not advance beyond Ndirandi and Malabvi, and shortly afterwards recrossed the Shire into Angoniland. This, the last of their raids into the Highlands, was also the most destructive of which we have any record, and caused a general feeling of insecurity which did not finally subside until in 1891 a British Administration assumed control of Nyasaland.

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ADMINISTRATORS.

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1891, February ...	...	H. H. Johnston, Esq., C.B., Commissioner and Consul-General.
1894, May ...	...	A. Sharpe, Esq. (acting).
1895, May ...	...	H. H. Johnston, Esq., C.B. Made K.C.B., January 10th, 1896.
1896, April ...	...	A. Sharpe, Esq. (acting). Made C.B., June, and Commissioner and Consul-General, July, 1897.
1897, December...	...	Lieut.-Colonel W. H. Manning (acting).
1898, December...	...	A. Sharpe, Esq., C.B.
1900, July ...	...	Lieut.-Colonel W. H. Manning (acting).
1901, April ...	...	A. Sharpe, Esq., C.B.
1903, March ...	...	Major F. B. Pearce (acting).
1903, November ...	...	Sir Alfred Sharpe, K.C.M.G., C.B.
1905, May ...	...	H. R. Wallis, Esq. (acting).
1905, November ...	...	Major F. B. Pearce, C.M.G. (acting).
1906, January ...	...	Sir A. Sharpe, K.C.M.G., C.B.
1907, April ...	...	Major F. B. Pearce, C.M.G. (acting).
1907, October ...	...	Colonel Sir William H. Manning K.C.M.G., C.B. (acting).
1908, April ...	...	Sir A. Sharpe, K.C.M.G., C.B.

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## LIST OF DEPARTMENTS AND STAFF.

## Governor.

Governor and Commander-in-Chief	... ..	Sir Alfred Sharpe, K.C.M.G., C.B.
Private Secretary	... ..	F. W. Sander (acting).

## Department of Government Secretary.

Deputy Governor	... ..	Major F. B. Pearce, C.M.G.
Asst. Deputy Governor	... ..	H. R. Wallis.

## Secretariat.

Chief Asst. Secretary	... ..	A. J. Williams.
Assistant Secretary	... ..	J. B. Keeble.
Clerks (3)	... ..	H. T. Barrett.
		F. W. Sander.
		A. M. Ryley.

## Native Affairs.

Supt. Native Affairs	... ..	J. C. Casson.
Clerk	... ..	H. F. McKay.

## Printing, Stationery and Gazette.

Government Printer	... ..	P. W. Fyson.
Assistant Printer	... ..	J. Campbell.
Editor of "Gazette"	... ..	H. T. Barrett.

## District Administration.

Residents, 1st Class (6)	{	H. C. MacDonald.
		C. A. Cardew.
		C. O. Ockenden.
		A. D. Easterbrook.
		C. Grant.
		<i>Vacant.</i>
Residents, 2nd Class (12)	{	B. T. Milthorp.
		H. L. Duff.
		R. W. Gordon.
		H. Armbruster.
		F. J. T. Storrs.
		L. T. Moggridge.
		E. B. Vertue.
		G. B. Ritchie.
		G. F. Manning.
		F. Webb.
	{	E. R. Cosgrove.
		W. K. Green.
		H. Silberrad.

Residents, 3rd Class  
(18)

H. D. Aplin.  
J. S. Wells.  
S. Robins.  
C. H. Hughes.  
E. C. White.  
E. F. Colville.  
R. A. McRae.  
D. D. Dobson.  
A. H. L. Wyatt.  
A. M. D. Turnbull.  
C. E. Aplin.  
Capt. L. E. L. Triscott.  
G. A. Shakespear.  
A. C. J. Ross.  
A. J. Brackenbury.  
G. A. Nevill.  
F. W. Andrews.  
G. C. Kennedy.

**Nyasaland Agency, Chinde.**

Vice-Consul and Agent. ... S. Hewitt-Fletcher.  
Clerk. ... G. H. V. Mercier.

**Treasury.**

Treasurer ... W. Wheeler, C.M.G.  
1st Assistant ... R. H. Salmon.  
2nd ditto. ... L. Smith.  
3rd ditto. ... C. Wilkins.

Clerks (5) {  
A. Ridge.  
B. Mason.  
A. H. Walker.  
C. H. Walker.  
C. T. Verry.

**Customs.**

Comptroller of Customs ... R. MacDonald.  
Clerk in Customs Office ... H. L. Bayles.  
Assts. in Customs Office ... {  
(2) { R. Roberts.  
E. H. Warren.

**Audit.**

Local Auditor ... H. I. Ingram.  
Asst. Auditors (2) ... {  
J. A. Cremer.  
— Oakeshott.

**Marine Transport.**

1st Officer ... E. L. Rhodes.  
2nd „ ... H. N. Tate.  
Chief Engineer ... F. G. Haynes.  
Second Engineer ... A. Urquhart.  
Clerk and Storekeeper ... F. S. S. Wright.

**Legal.**

Judge of the High Court ...	C. J. Griffin.
Attorney-General ... ..	R. W. Lyall Grant.
Clerk to the High Court and Registrar ... ..	J. MacMorland.
Clerk ... ..	J. Sheridan.
Chief Constable ... ..	P. D. H. S. Piers.

**Medical.**

Principal Medical Officer ...	H. Hearsey.
Medical Officers (9)	{ A. H. Barclay.
	{ P. Wykesmith.
	{ J. E. S. Old.
	{ J. B. Davey.
	{ H. S. Stannus.
	{ E. H. A. Pask.
Nurses (5)	{ Vacant.
	{ Vacant.
	{ Miss R. Paterson.
	{ Miss S. J. Barnes.
	{ Miss A. M. Tadman.
	{ Miss C. L. Collins.
	{ Miss A. M. Pike.

**Transport.**

Chief Transport Officer and Storekeeper ...	H. Woodard.
Assistant Storekeeper ...	V. J. Keyte.
Motor Engineer ... ..	W. G. Phelps.

**Military. 1st Battalion K. A. Rifles (Home Service Battalion).**

Inspector-General of Protectorate Forces.	Brevet Colonel G. E. Gough, V.C., A.D.C.
Staff Officer ... ..	Capt. The Hon. H. Dawnay, D.S.O.
Commandant ... ..	Bt. Major (tempy. Lt.-Col.) H. A. Walker.
Adjutant and Quarter- master ... ..	Capt. (tempy. Major) H. W. Stevens.
Company Commanders.	{ Capt. J. Rosborough, Lieuts. (tempy. Capts.) H. A. Case, G. C. Sladen,
	{ R. H. Pipon.
	{ Lieuts. D. Mills, H. A. R. Hoffmeister,
Subalterns.	{ G. Wynne Finch, G. S. Brander,
	{ B. Edwards, and H. T. C. Jones
Sgt.-Major ... ..	J. Archer. [Vaughan.
Military Accountant and Paymaster ... ..	E. M. Alexander.
Clerk ... ..	P. W. Doyley.

## Indian Contingent.

Double Company Com-		
mander	... ..	Captain P. C. Hampe-Vincent.
Subaltern and Quarter-		
master	... ..	<i>Vacant.</i>

## Post Office.

Postmaster-General	... ..	N. Farrar.
		G. H. Tuckett.
		G. E. Jones.
Postmasters		E. J. Letts.
(7)		F. J. Kirkpatrick.
		A. H. Jepson.
		W. O'Hara.
		<i>Vacant.</i>

## Agricultural and Forestry.

Director	... ..	J. S. J. McCall.
Foresters (2)	... ..	{ J. McL. Purves.
		{ E. W. Davy.

## Public Works and Survey.

Director of Public Works		
and Survey	... ..	T. I. Binnie.
1st Assistant Surveyor	... ..	T. F. Firr.
2nd	... ..	J. Bannerman.
3rd	... ..	G. N. Beaumont.
Clerks	... ..	{ H. R. Cruise.
		{ G. B. Anderson.

## Roads.

Engineer Surveyor	... ..	H. S. Chettle.
Supervisor of Road-		
making	... ..	F. W. Hardie.

## Buildings.

Supt. of Buildings...	.. ..	R. Jerman.
		{ A. E. Wightman.
Assistants do.	... ..	{ R. A. Biggleston.
		{ H. Mathews.

## EXECUTIVE COUNCIL.

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### PRESIDENT.

His Excellency the Governor,  
Sir A. Sharpe, K.C.M.G., C.B.

### MEMBERS.

The Hon. the Deputy Governor,  
Major F. B. Pearce, C.M.G.  
The Hon. the Asst. Deputy Governor,  
H. R. Wallis.  
The Hon. the Treasurer,  
W. Wheeler, C.M.G.  
The Hon. the Attorney-General,  
R. W. Lyall Grant.  
Clerk to the Council, A. Jay Williams.

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## LEGISLATIVE COUNCIL.

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### PRESIDENT.

His Excellency the Governor,  
Sir A. Sharpe, K.C.M.G., C.B.

### MEMBERS.

#### OFFICIAL.

The Hon. the Deputy Governor,  
Major F. B. Pearce, C.M.G.  
The Hon. the Asst. Deputy Governor,  
H. R. Wallis.  
The Hon. the Treasurer,  
W. Wheeler, C.M.G.  
The Hon. the Attorney-General,  
R. W. Lyall Grant.

#### UNOFFICIAL.

The Hon. and Rev. Dr. A. Hetherwick.  
The Hon. A. F. Kidney.  
The Hon. C. Metcalfe.  
Clerk to the Council, A. Jay Williams.



## SERVICES OF OFFICERS.

Officers who have passed the Government Chinyanja Language Examination are distinguished by (C), the Government Swahili Language Examination by (S), and the Government Law Examination by (L).

ALEXANDER, EWEN MACEWEN.—Clerk to Armed Forces, April, 1899; Ag. Collector, Zomba, Aug.-Sept., 1899; Ag. Paymaster, May-Nov., 1900; Commanding Details, Military Headquarters, Nov., 1900 to Jan., 1901; Ag. Quartermaster, Feb.-June, 1901; Military Accountant and Paymaster, June, 1901. (C).

ANDERSON, G. B.—Ed. Gordon's College, Aberdeen; Clerk, Receiver and Accountant General's Office, G.P.O., London, 1897-1899; Clerk, Finance Division, War Office, 1899; South African War, 1901-1902 (Medal and 4 clasps); Clerk, Money Order Branch, G.P.O., Transvaal, 1902; Clerk, Executive and Legislative Councils Department, Transvaal, 1903-1907; Assistant Accountant, Transvaal Agent General's Office, London, 1907-1909; Clerk, Public Works Department, Nyasaland Prot., 1909.

APLIN, CHARLES EDWARD D'AUVERGNE.—South African Campaign (Rhodesian Field Force) 1900-1, (medal with 5 clasps); Clerk, Customs Dept., Nyasaland Prot., Aug., 1903; Ag. Director of Customs, April-May, 1904; Clerk in Paymaster and Military Accountant's Office, April, 1904; Ag. Asst. Paymaster, June-Sep., 1904; Ag. Paymaster, Sep., 1904 to Feb., 1905; Asst. Paymaster, Home Service Battn., K. A. Rifles, April, 1905; Ag. Paymaster, April-Oct., 1907; Resident, 3rd Grade, Jan., 1908.

APLIN, HAROLD D'AUVERGNE.—Clerk in Secretariat, July, 1901; 3rd Assistant Collector, Oct., 1901; Asst. Collector, West Nyasa dist., Nov., 1901 to June, 1902; Asst. Collector, Upper Shire dist., July, 1902 to June, 1904; Ag. Collector, Lower Shire dist., Jan.-Aug., 1905; Asst. Collector, Liwonde, Sept., 1905; Ag. Resident, Liwonde, March-Oct., 1907; Asst. Resident, Ncheu, June, 1908; Ag. Resident, Upper Shire dist., July, 1909. (C).

ARMBRUSTER, HUBERT.—B.A. Caius College, Cambridge; Asst. Collector, Nyasaland Prot., Aug., 1899; Ag. Dist. Magistrate, Marimba dist., April, 1905; 2nd Grade Resident, April, 1906; Ag. Resident, Marimba dist., June, 1908 to Sep., 1909. (C). (S).

BARCLAY, ALEXANDER HENRY.—L.R.C.P. and S. (Edin.). 1898; Medical Officer, Nyasaland Prot., April, 1898; Passed with distinction School of Tropical Medicine Examination, 1903; Served in South Angoniland Expedition, 1898; Somaliand Campaign, 1902-3; Medical Officer, Mlanje dist., 1904, Blantyre, 1905, Central Angoniland, 1907; Ag. Principal Medical Officer, March, 1908.

BARRETT, HUGH TREHERNE.—2nd Clerk in Secretariat, April, 1902; 1st Clerk, Aug., 1903; Ag. Asst. Secretary, May-Nov., 1904, and Nov., 1906 to May, 1907. (C).

BAYLES, HERBERT LAURENCE.—Ed. Dulwich College; Clerk in the Office of the Crown Agents for the Colonies, Jan., 1903; Apptd. Clerk in the Customs Department, Nyasaland Prot., Aug., 1909.

BEAUMONT, GEORGE NEVILLE.—Asst. Surveyor, Nov., 1905. (C).

BINNIE, THOMAS INGLIS.—Supervisor of Roads, Nyasaland Prot., March, 1897; Asst. Surveyor, Survey Dept., March, 1898. Surveyor to Anglo-Portuguese Provisional Boundary Delimitation, 1899-1900; Chief-Surveyor, Dec., 1900; Director of Public Works, Dec., 1904. (C).

BRACKENBURY, ARTHUR JOCELYN.—Ed. Clifton College; served in South African War, medal and 3 clasps; Transvaal Civil Service, 1901-1907; Private Secretary to Sir F. Lugard, Governor, Hong Kong, 1907-1909; 3rd Grade Resident, Nyasaland Prot., Jan., 1909.

CARDEW, CLAUD AMBROSE.—Asst. Agent, Chinde, Nyasaland Prot., June, 1893; Asst. Collector, Mlanje dist., March, 1894; Collector, South Nyasa dist., 1894; Judicial Officer, 1895; Collector, West Nyasa dist., 1897; 2nd Grade Assistant, April, 1902; Dist. Magistrate, Upper Shire, 1902; 1st Grade Resident, April, 1906. (C). (S).

CASSON, JOSEPH CHARLES.—Priv. Secy., Sir H. H. Johnston, G.C.M.G., C.B., 1904-5; 4th Accountant, Feb., 1896; 3rd Asst. Treasurer, 1900; Asst. Secretary to Admin., April, 1901; Accompanied H.M. Commissioner to Congo Free State on the Rabinek Inquiry, Jan.-April, 1903; Ag. Supt. of Native Affairs, May, 1903; Supt. of Native Affairs, Aug., 1903.

CHETTLE, HERBERT STALEY.—Road Engineer, Nyasaland Prot., Aug., 1898.

COSGROVE, ERNEST REGINALD.—Asst. Collector, Nyasaland Prot., Aug., 1897. (C).

COSTLEY-WHITE, ERNEST.—B.A. (Oxford), 1900; Clerk to the Armed Forces, Nyasaland Prot., April, 1900; Asst. Paymaster, April, 1902; 3rd Grade Resident, June, 1904; Asst. Collector, South Nyasa dist., June, 1904; Ag. Resident, South Nyasa dist., Nov., 1905 to March, 1907, and Nov., 1907 to 1910. (C). (S). (L).

CREMER, JOHN AWDRY.—Born, 1881; Ed. Trin. Coll., Glenalmond, 1893-1900; Ch. Ch. Oxford, 1900-3; B.A., June, 1903; Col. Audit Branch, Exchequer and Audit, July, 1903; Asst. Auditor, S. Nigeria, Sep., 1905; transferred Nyasaland, May, 1908.

CRUISE, HENRY RICHARD.—Ed. St. Edmunds College, Ware, Herts.; Ag. 4th Clerk, Colonial Secretary's Office, Leeward Islands, Dec., 1903; Ag. 3rd Outdoor Officer, Treasury, Port Officer, etc., Antigua May, 1904; Clerk to Attorney-

General, Leeward Islands, Aug., 1905; Ag. 2nd Clerk Colonial Secretary's Office, Leeward Islands, April, 1906; Clerk, Public Works Dept., Nyasaland Prot., Sep., 1906. (C). (S).

DAVEY, JOHN BERNARD.—M.B. (Lond.), 1900, M.R.C.S. (Eng.), L.R.C.P. (Lond.), 1899; D.T.M., Liverpool, 1908; University College and Middlesex Hospital, London; Entrance Exhibitioner and Freeman Scholar, Middlesex Hospital; Civil Surgeon, South African War, 1900-1 (medal and clasps); Medical Officer, Nyasaland Prot., 1902. (C).

DAVY, ERNEST WILLIAM.—Royal Botanic Gardens, Kew, 1904; Asst. Forester, Nyasaland Prot., Jan., 1906; Ag. Head, Forestry and Botanical Dept., Feb. to Sept., 1907. (C).

DOBSON, DENYS DOUGLAS.—Ed. Classical Scholar of Cheltenham College, B.A., Oxford Final Honour School of Jurisprudence; Apptd. Resident, 3rd Grade, Nyasaland Prot., Aug., 1905. (C). (L).

DOYLEY, PERCY WILLIAM.—Clerk in the Paymaster's Office, Nyasaland Prot., April, 1905.

DUFF, HECTOR LIVINGSTONE.—Asst. Collector, Nyasaland Prot., 1897; Asst. Collector, Zomba, 1898; Asst. Collector, Blantyre, 1899; Ag. Collector, West Nyasa dist., 1899; Collector, Zomba dist., Oct., 1899 to Sept., 1902; Resigned from Administration service, Nov., 1903; Reaptd. April, 1904; Collector, Mlanje dist., May, 1904; Ag. Collector, Blantyre dist., May-June, 1905; 2nd Grade Resident, April, 1906; Ag. Resident, Blantyre dist., Feb.-Dec., 1907; Resident, Mlanje dist., Jan., 1908. Seconded, Feb., 1909-10. Admitted Member Inner Temple, Jan., 1909. 2nd Class Honours Roman Law, Criminal Law, Law of Real Property and Conveyancing, 1909. (C). (L).

EASTERBROOK, ARTHUR DOVE.—Asst. Collector, Nyasaland Prot., June, 1896; specially thanked for services in connection with the Transport of Troops to the Kazembe Expedition, 1899; 2nd Grade Resident, May, 1902; Dist. Magistrate and Collector, N. Nyasa dist., May, 1904; Ag. Resident and Compt. of Customs, Chiromo, Oct., 1907 to May, 1908; 1st Grade Resident, Nov., 1908; Resident and Magistrate on Sleeping Sickness Duty, N. Nyasa dist., Dec., 1908 to Oct., 1909. (C).

FARRAR, NICHOLAS.—Supernumerary, P.W.D., British Guiana, 1882; 5th Class Clerk, Treasury, 1889; 4th Class Clerk, Treasury, 1890; 3rd Class Clerk, G.P.O., 1893; 2nd Class Clerk, Audit Department, 1900; Postmaster-General, Nyasaland Prot., Jan., 1905.

FIRR, TOM FREEMAN, A.M.I.C.E., F.S.I.—Ed. Crystal Palace Engineering School; served with E. Kent Yeomanry, S. African War, Feb., 1900 to Aug., 1901 (medal and 3 clasps); Apptd. 1st Asst. Surveyor, June, 1903; Ag. Director, Public Works Dept., Jan. to May, 1905, and April-Oct., 1907.

FLETCHER, STANLEY HEWITT.—Member Inst. Chartered Accountants, 1892; 2nd Accountant, Nyasaland Prot., June, 1893; Ag. Chief Acct. on three occasions totalling two years;

Collector, Zomba dist., April, 1900; British Vice-Consul and Agent, Chinde, Jan., 1901. (Central Africa medal and clasp).

FYSON, PERCIVAL WILLIFRID.—Asst. Govt. Printer, Perak, 1896-9; Head Printer, Nyasaland Prot., July, 1899; title altered to Government Printer, 1907.

GORDON, RICHARD WOLF.—Clerk in Supreme Court of Judicature (England), Probate, Divorce and Admiralty Division, May, 1892; 3rd Assistant, Nyasaland Prot., June, 1899; Ag. Collector, Angoniland, 1904; 2nd Grade Resident, April, 1906; Resident, Cen. Angoniland, Nov., 1906. (C).

GRANT, COLIN.—3rd Assistant Nyasaland Prot., 1897; Asst. Collector, Ruo dist., March, 1897 to Oct., 1898; Ag. Collector, Lower Shire dist., Nov.-Dec., 1898; Mlanje dist., Feb.-July, 1899; Lower Shire dist., May, 1900 to Dec., 1901; West Nyasa dist., Dec., 1901 to April, 1902; Blantyre, Aug.-Sept., 1902; Zomba, Oct., 1902 to May, 1903; Lower Shire dist., June-Dec., 1903; West Shire, Dec., 1904; Asst. Collector, Blantyre, Aug., 1905; 2nd Grade Resident, Oct., 1905; Resident, Chikala, May, 1906 to Feb., 1907; Resident, Zomba dist., Feb., 1907; Resident, Chikala, Nov., 1907 to Dec., 1908; 1st Grade Resident, Feb., 1909; Resident, Blantyre dist., July, 1909. (C).

GRANT, R. W. LYALL.—Ed. Aberdeen Grammar School and Aberdeen, Göttingen and Marburg Universities; M.A. (Aberdeen); Studied Law at Edinburgh University, LL.B. (Edin.); Won Vans Dunlop Scholarship in Law; Admitted Member of the Faculty of Advocates (Scottish Bar), 1903; Delivered course of lectures in Edinburgh University on the Law of Domicile, 1908; Captain, 1st Lowland Heavy Battery, R.G.A. (T), 1909; Attorney General, Nyasaland Prot., April, 1909.

GREEN, WILLIAM KIRBY.—Ed. Eton and Bruges; Served in 10th Regt. Imperial Yeomanry, South Africa, 1900-1 (medal with 4 clasps); 3rd Grade Resident, Nyasaland Prot., 1901; 2nd Grade, Feb., 1909. (C).

GRIFFIN, CHARLES JAMES.—B.A. (hons.) Royal University, Ireland; 1st Scholar in Modern Literature; Exhibitioner; Chancellor's Gold Medallist; Called to the Irish Bar, 1898; Crown Prosecutor, Nyasaland Prot., July, 1901; Also discharged duties of Registrar of Deeds, Registrar-General of Births, Marriages, Deaths, Banking, &c.; Ag. Chief Judicial Officer and H. B. M. Vice-Consul, Nov., 1901 to June, 1902; Ag. Judge of High Court, Feb.-Oct., 1904, and Nov., 1905 to Feb., 1906; Attorney-General, Nov., 1905; Judge of High Court, Feb., 1906; Member of H.B.M. Court of Appeal of East Africa; Chairman of Commission on Trading and Licensing in Nyasaland, May-Aug., 1909.

HARDIE, FRANCIS WILLIAM.—Ed. George Heriot's School, and Heriot Wall College, Edin.; Served 6 years Surveyor and Civil Engineer, Livingstonia Mission, Lake Nyasa; Appd. Roads Supervisor, Nyasaland Prot., July, 1908.



HAYNES, FREDERICK GAMBIER, R.N.R.—Marine Engineer; Cert. 1st Class Board of Trade, 1900; Member Inst. Marine Engineers; Engineer, R.N.R., 1900; Asst. Engineer, Naval Dept., May, 1897; Chief Engineer, Nov., 1897.

HEARSEY, HERBERT HYDE YOUNG, M.B., C.M., (Edin.), 1890.—Medical Officer, Nyasaland Prot., June, 1896; Principal Medical Officer, April, 1902.

HUGHES, CHARLES HENRY.—Clerk in Customs, May, 1901; Ag. Director of Customs, July-Dec., 1904; Transf. to Collectorate, April, 1904; Ag. Consular Clerk, Chinde, Jan.-July, 1905; Ag. Registrar, High Court, July, 1905 to May, 1906; Asst. Resident, Blantyre dist., Jan., 1907 to Dec., 1908; Asst. Resident, Liwonde, Upper Shire dist., July, 1909. (C).

JEPSON, ALWYN HALL.—Ed. Mechanics Institute, Hyde. Entered Imperial Postal and Telegraph Service 1892; Served with Military Telegraphs South African War, 1900-2 (medal and 4 clasps); Military Telegraphs, Ceylon, 1903-6 (part of period Acting Superintendent and Instructor in Telegraphy and Telephony); Re-transferred to Home Service, 1906; Apptd. Postmaster, Nyasaland Prot., Aug., 1907.

JONES, GEORGE ERNEST.—London Postal Service, Nov., 1883 to May, 1891; British Postmaster at Chinde (unattached), Sept., 1895 to March, 1898; Postmaster, Nyasaland Prot., Oct., 1899; Ag. Postmaster-General, April, 1904 to Feb., 1905, and April-Sept., 1907.

KEEBLE, JOHN BRIGHT.—Ed. Queen Elizabeth's Grammar School; 1st Clerk, Secretary's Office, Nyasaland Prot., Feb., 1902; Ag. Asst. Secretary, April-Aug., 1903; Asst. Secretary to Admin., Aug., 1903; Ag. Secretary to Admin., April-Nov., 1906; Ag. Supt. of Native Affairs, June, 1907 to Jan., 1908; Asst. Secretary, Govt. Secretary's Office, Oct., 1907, (New post on abolition of *Asst. Secretary to Administration* on re-organisation under "The Nyasaland Order in Council, 1907"); Ag. Chief Asst. Secretary, April,-Nov., 1909. (C). (S).

KEYTE, VINCENT JOHN.—Asst. Storekeeper and Commissariat Officer, Aug., 1897; Ag. Asst. Agent, Chinde, Jan., 1898 to Jan., 1899; Ag. C. C. O., Feb.-Nov., 1899; Ag. Asst. Collector, Fort Johnston, Nov., 1899 to July, 1900; Transport Officer, Chikwawa, Feb., 1901 to March, 1902; Ag. C. C. O., March-Oct., 1902; Ag. Asst. Paymaster, Oct., 1902 to March, 1903; Ag. Customs Assistant, Chiromo, March-May and Oct.-Dec., 1903; Ag. Asst. Collector, Chiromo, Jan.-Aug., 1904; Ag. Collector Port Herald, Aug., 1904 to Feb., 1905; Ag. C. C. O., April, 1905; Ag. C. T. O., June, 1908.

LETTS, EDWARD JOHN.—Postal Clerk, G.P.O., London, 1901; Postmaster, Nyasaland Prot., Sept., 1901. (C).



MACDONALD, HUGH CAMPBELL.—Clerk in Accountant's Office, Nyasaland Prot., Sept., 1894; Asst. Collector, 1896; Judicial Officer, 1898; 1st Grade Resident, May, 1902; Resident, Mombasa, 1904.

MACDONALD, RANALD.—Clerk, Board of Trade Offices, Glasgow, Dec., 1888; Clerk and Dep. Supt., Jan., 1892; Asst. Collector and Clerk to Armed Forces, Nyasaland Prot., May, 1897; Judicial Officer, 1899; 2nd Grade Resident and Dir. of Customs, April, 1901; Compt. of Customs, Oct., 1905; (Central Africa medal, 1898; South Africa medal and 2 clasps, 1900). (C).

MACMORLAND, JAMES.—Clerk in Judicial Dept., April, 1902; Registrar of High Court, June, 1906. (C).

MACRAE, ROBERT ARTHUR.—Ed. Worcester College, Oxford, Chief Constable, Nyasaland Prot., May, 1903; Resident, 3rd Grade, Aug., 1905; Asst. Resident, Chikwawa, Jan., 1906; Asst. Resident, Dowa, March, 1906; Asst. Resident, Ngara, April, 1907; Asst. Resident, Chiromo, Sept., 1908; Ag. Resident, Ruodist, Dec., 1908. (C).

MANNING, GEORGE FREDERICK.—B.A. Trinity College, Dublin, 1898; Joined Bechuanaland div. B.S.A. Police, 1898; Served through South African War until 1901; Chief Constable, Nyasaland Prot., 1901; Asst. Collector, Zomba, 1901-2; Asst. Collector, Marimba, dist., 1903; Asst. Collector, Zomba, 1904-5; Asst. Resident, Dedza, 1905; Resident, 2nd Grade, Aug., 1907; Ag. Resident, Blantyre, Feb.-July, 1909; Ag. Resident, Marimba, Aug., 1909. (C). (S).

MASON, BERTRAM.—Ed. Harr. College, Barbados; Asst. Clerk, Police Magistrate's Court, District "B," April, 1895; Col. Secretary's Office, April, 1896; Junior Clerk, Impl. Dept. of Agric. for the West Indies, April, 1899; Clerk in Treasury, Nyasaland Prot., June, 1905.

McKAY, HAROLD FOLGRAVE.—Ed. Margate College, Kent, and Cape University (South African College); Entered Cape of Good Hope Civil Service, 1896 (Agric. Dept.), Resigned 1898; Served with Bechuanaland Field Force in Langeberg Rebellion (medal and clasp), 1897; British South Africa Police (Matabeleland and Barotseland), 1898; Lieutenant Imperial Yeomanry (6th Scots Battn.), 1900; Staff Officer for Intelligence, 1901; General Pilcher's Staff; (Lieut. in the Army—temporary rank—attached 7th Mounted Infantry); Queen's Medal (5 clasps), King's Medal (2 clasps); Transvaal Government Service, 1903; Asst. Adjutant, Northern Mtd. Rifles; Capt. and Adjutant, 1905; Transferred as Chief Clerk, Irrigation Department, from which post retrenched, March, 1908; Served in Zululand Rebellion, 1906—Captain, Transvaal Mounted Rifles (medal and clasp); Clerk in Treasury, Nyasaland Prot., 1908; Transferred to Native Affairs Dept., April, 1909. (C).

McCALL, JACOBUS STEWART JOHNSON.—P.A.S.I., C.D.A. (Glas.) Ed. High School, Veterinary and Agricultural Colleges, Glasgow; Lecturer, Agriculture and Biology, Egyptian Govt.

Agricultural College, 1905-8; Apptd. Director of Agriculture, Nyasaland Prot., 1908.

MERCIER, GUY HENRY VIENOT.—2nd Clerk, Registrar and Provost Marshal's Office, Antigua, 1895; 4th Clerk, Col. Secretary's Office, 1897; Clerk to Registrar and Provost Marshal, Nevis, 1898; 2nd Treasury Officer and Dep. Coroner, Nevis. 1901; Clerk, Chinde Vice-Consulate, March, 1905.

MILTHORP, BERNARD THOMAS.—Asst. Collector, Nyasaland Prot., Dec., 1896; Fort Johnston, April-Nov., 1897; Blantyre, Dec., 1897 to Jan., 1899; Chiromo, Aug., 1899 to Jan., 1900; Mlanje, Jan., 1900 to April, 1901; Blantyre, April, 1901 to April, 1902; Liwonde and Fort Hill (Nyasa-Tanganyika Plateau), 1903; Chikwawa, Sept., 1903 to Dec., 1904; Chikwawa, Aug., 1905 to Mar., 1908; Neno, Dec., 1908; 2nd Grade Resident, Feb., 1902. (C).

MOGGRIDGE, LEWIS TRAHERNE.—Ed. Clifton College and King's College, Cambridge; Chief Constable, Nyasaland Prot., April, 1899; Asst. Postmaster-General, Zomba, Oct., 1899; Asst. Collector, Fort Johnston, Dec., 1899; Asst. Collector, Blantyre, July, 1900; Asst. Collector, Chiromo, Jan., 1901; Collector and Dist. Magistrate, Blantyre, March, 1901; 2nd Grade Resident, April, 1906; Resident, Chiromo, 1905; Ag. Resident, Blantyre, July, 1908; Resident, West Nyasa, Mar., 1909. (C). (L).

NEVILL, G. A.—Served in South African War, 1899-1902; Commanded a squadron in Lumsden Horse, came from India with Regiment; transferred to South African Constabulary, Jan., 1901; held the rank of Captain till Sept., 1908; Hon. rank of Captain in Army; Commanded mobile squadron in Constabulary, afterwards commanded Wilge River Sub-division Orange River Colony; Queen's and King's medals; Apptd. Resident, 3rd Grade, Nyasaland Prot., May, 1909.

NORRIS, SAM KNIGHT.—M.B., C.B., (Edin. 1897). Medical Officer, Nyasaland Prot., Oct., 1903; Ag. Principal Medical Officer, Aug., 1907.

OCKENDEN, CHARLES OLIVER.—Postmaster, Nyasaland Prot., June 1895; Asst. Collector, Nov., 1895; 2nd Grade Assistant, May, 1899; 1st Grade Resident, Aug., 1907. (C).

O'HARA, WILLIAM.—Sorting Clerk, G.P.O., London, 1898-9; South Africa War, 1900-1 (two medals and six clasps); Chief Clerk and Acct., Burgher Camps Dept., Natal, 1902; Senior 2nd Class Clerk, Postal Dept., Transvaal, 1902-7; Postmaster, Nyasaland Prot., No., 1908.

OLD, JOSEPH EDGAR SYDNEY.—M.D. (Brux.), M.R.C.S., L.R.C.P., L.S.A., Qualified 1895; Veterinary certificate, 1905; Medical Officer, Nyasaland Prot., April, 1900; Ag. Principal Medical Officer, Nov., 1904 to Aug. 1905; Medical Officer, Blantyre, 1905; Karonga, 1906-7; Chiromo, July, 1907-8; Blantyre, 1909.

PASK, EDGAR HARRY ALLON.—Ed. Taunton School and University of Sheffield, M.B., B.S. (Lon.), M.B., Ch. B. (Sheff.),

M.R.C.S., L.R.C.P. (Eng.), House Surgeon and House Physician, Royal Infirmary, Sheffield; Apptd. Tem. Medical Officer, Nyasaland Prot., Aug., 1908.

PEARCE, MAJOR FRANCIS BARROW, C.M.G. (1904).—Entered the Army 25th Aug., 1886; Captain, July, 1893; Major (brevet), Sept., 1900; Asst. Deputy Commissioner and Vice-Consul, Nyasaland Prot., Nov., 1897; Deputy Commissioner, Oct., 1901; Ag. Commissioner, March-Nov., 1903, Nov., 1905 to Jan., 1906, March to Oct., 1907; Deputy Governor, Oct., 1907.

PIERS, PETER DAVID HANDYSIDE.—Chief Constable, Nyasaland Prot., Sept., 1899; Transf. to Collector, Sept., 1900; Asst. Collector, Karonga, Jan., 1903 to Jan., 1904; Asst. Collector, Dowa, Jan.-Aug., 1904; Asst. Collector, Kota-Kota, Aug.-Nov., 1904; re-transf., Chief Constable, July, 1905.

PURVES, JAMES MCLENNAN.—Student, Royal Gardens, Kew, 1899; Forester, Nyasaland Prot., May, 1900; Ag. Head of Forestry and Botanical Dept., Jan., 1906 to Feb., 1907, and Oct., 1907 to Feb., 1909.

RHOADES, EDMUND LUSHINGTON.—Ed. Rugby; Lieut. and Commander Nyasaland Naval Dept., 1894; 1st Officer, Marine Transport Dept., 1904.

RIDGE, ARTHUR.—Clerk in Treasury, April, 1900.

RITCHIE, GEORGE LE HARRIVEL KERR BAINBRIDGE.—Natal Civil Service, 1891; Lieut. 1st Battn. N.R.R., 1892; Served with Mashonaland Field Force, 1896, attached to Rhodesian Horse, present at the relief of Ft. Charter, Ft. Salisbury, Mazoe, and Hartley Hills, mentioned in despatches (medal and clasp). Asst. Collector, Nyasaland Prot., Dec., 1897; Ag. Asst. Paymaster, and Asst. Collector, Zomba, till Oct., 1898; Asst. Collector, Ft. Alston, Oct., 1898 to April, 1900; Ft. Manning, April-Sept., 1899; Ft. Alston, May, 1901 to Jan., 1902; Karonga, Jan., 1902 to March, 1903; Ag. Collector, Karonga, Feb.-July, 1904; Asst. Collector, Karonga, July, 1904; 2nd Grade Resident, April, 1907; Ag. Resident, West Nyasa dist., April, 1907; Ag. Resident, West Shire, April, 1908; Ag. Resident, Mlanje dist., Dec., 1908 to June, 1909. (C).

ROBERTS, ROBERT.—Ed. Trent. College, Notts. Clerk in Customs, Nyasaland Prot., July, 1904; Customs Officer, 1907. (C).

ROBINS, STEPHEN.—3rd Asst. Nyasaland Prot., May, 1902; Asst. Collector, Ft. Johnston, June, 1902-4; Asst. Collector, Ngara, Jan., 1905; Asst. Resident, Mombera, Aug., 1907; Ngara, Dec., 1907. (C). (L).

ROSS, ARTHUR CHARLES JOHN.—Ed. Queen Elizabeth's School, Ipswich, and Blair Lodge, Stirlingshire; entered the Civil Service, British Guiana (Govt. Lands Department), Jan., 1896; Police Dept., 1897; Transferred Gold Coast Colony, Oct., 1899, as Supervisor, Preventive Services; 1st Class Supervisor, 1900; Inspector, 1902; Awarded Royal Humane Society's medal and certificate for saving life in the Tano River, Gold Coast

Colony; Commissioner, Western Frontier, 1906; Invalided and pensioned, 1907; Apptd. 3rd Grade Resident, Nyasaland Prot., Aug., 1908.

RYLEY, ARTHUR MYLIUS.—3rd Clerk, Secretariat, April, 1906.

SALMON, ROBERT HUGH.—3rd Assistant, Dec., 1898; Transf. to Treasury; 2nd Asst. Treasurer, Jan., 1901; 1st Asst. Treasurer, Dec., 1908.

SANDER, FREDERICK WILLIAM.—2nd Clerk in Secretariat, March, 1904. (C).

SHAKESPEAR, GEORGE ALBERT.—Served in South African Constabulary, Jan., 1901 to Jan., 1908; Apptd. 3rd Grade Resident, Nyasaland Prot., Aug., 1908; Asst. Resident, Liwonde, Oct., 1908; Zomba, March, 1909; Actg. Resident, Chikala, April, 1909.

SHARPE, SIR ALFRED, K.C.M.G. (June, 1903), C.B. (June, 1897).—Born, 1853. Vice-Consul, Nyasaland, 14th Feb., 1891; H.M. Vice-Consul for the territories under British influence to the north of Zambesi, Feb., 1893; and Consul for the same territories, Feb., 1894; Ag. Commr. and Consul-General at Zomba, May, 1894 to May, 1895; was given the rank of Deputy Commr., April, 1896; again acted as Commr. and Consul-General from April, 1896 to July, 1897; Commissioner and Consul-General for territories under British influence to the north of the Zambesi, July, 1897; received the jubilee medal, 1897; a new Commission issued appointing him Commissioner, Commander-in-Chief and Consul-General for the Nyasaland Prot., Jan., 1902; received the coronation medal, 1902; a new Commission issued appointing him Commissioner and Commander-in-Chief, 1905; a new Commission issued appointing him Governor and Commander-in-Chief, 1907.

SHERIDAN, JOSEPH.—Ed. Castleknock College and Trinity College, Dublin; called to the Bar, Ireland, 1907; went Connaught Circuit; Apptd. Judicial Clerk, Nyasaland Prot., July, 1908; prosecuted on behalf of the Attorney-General on several occasions, 1908-9; Secretary to Commission on Trading and Licensing, 1909.

SILBERRAD, HUBERT.—Ed. at Wren's and Finsbury Technical College, Engineering; Passed special course of Gold Assaying; Asst. Collector, East African Prot., May, 1903; Asst. Collector, Taveta, Aug., 1903; Ag. Collector, Teita, Feb.-March, 1904; Taveta, April, 1904; Ag. Collector, Lamu, Feb., 1906; Fort Hall, Nov., 1906; Ag. District Commissioner, Nyeri, March, 1907; Lamu, Jan., 1909; Passed Swahili Higher Standard and Indian Law Examinations, E.A.P. (Civil, Criminal, Evidence); Transferred as 2nd Grade Resident, Nyasaland Prot., July 16th, 1909; Asst. Resident, Chintechi, Aug. 1909.

SMITH, LAURENCE.—Ed. Bedford Modern School. Clerk in Accounts Dept., Nyasaland Prot., 1899; 3rd Asst. Treasurer, Oct., 1902; 2nd Asst. Treasurer, Dec., 1908. (C).



STANNUS, HUGH STANNUS.—Ed. St. Thomas's Hospital and Paris; M.B. (Lond.), 1902; M.R.C.S. (Eng.), L.R.C.P. (Lond.), 1901; Medical Officer, Nyasaland Prot., May, 1905.

STORRS, FRANCIS JOHN TOWNSEND, B.A.—Ed. Tonbridge School and Emanuel College, Cambridge; Asst. Collector, Nyasaland Prot., July, 1899; Asst. Collector, Blantyre, Nov., 1899; Nkata Bay, Jan., 1900; Ag. Collector, Nkata Bay, May-Dec., 1901; Asst. Collector, Chintechi, Feb.-April, 1902; Fort Alston, April, 1903; Ngara, May, 1904 to March, 1905; Asst. Resident, Blantyre, Nov., 1905; 2nd Grade Resident, April, 1906; Resident, Zomba, May, 1906; Mlanje, Oct., 1906; Port Herald, June, 1908. (C).

TATE, HUGH NORTON.—Lieut. R.N.R.; Naval Dept., Nyasaland Prot., 1898.

TRISCOTT, CAPTAIN LIONEL EDWARD LORAIN.—Ed. Chatham House College, Kent; Captain 3rd Battn. The Buffs (Militia), 1897; South Africa, 1900-2, King's and Queen's medals (mentioned in Despatches); Hon. rank of Captain in the Army, 1902; Apptd. Resident, 3rd Grade, Nyasaland Prot., March, 1907. (C). (L).

TUCKETT, GEORGE HENRY.—Sorting Clerk and Telegraphist, Imperial Postal Service, 1892; Postmaster, Blantyre, Nyasaland Prot., 1897; Ag. Assistant Agent, Chinde, 1898; Ag. British Vice-Consul, March-May, 1899; Ag. P.M.G., May-Nov., 1900; Postal Agent, Chinde, 1901.

TURNBULL, AUBREY MARRIOT DALWAY.—Ed. Bath College; Clerk in Treasury, Nyasaland Prot., Jan., 1903; 3rd Grade Resident, May, 1906; Asst. Resident, Liwonde, Upper Shire dist., Sept., 1906; Asst. Resident, Ncheu, Upper Shire dist., Jan., 1907; Ag. Registrar of High Court, May-Dec., 1908; Ag. Resident, Mlanje dist., July, 1909; District Magistrate, July, 1909. (C). (S). (L).

URQUHART, ANDREW.—Marine Engineer; Cert. 1st Class, Board of Trade Exam., Dec., 1904; Member Marine Engineers' Assoc.; Engineer, Marine Transport Dept., Nyasaland Prot., March, 1905.

VERTUE, GEORGE ELFORD BANNERMAN.—3rd Asst., Nyasaland Prot., Jan., 1901; Ag. Collector, W. Shire dist., 1901-2; Marimba dist., 1902; Lower Shire dist., 1902-3; Asst. Collector, Upper Shire dist., 1905; 2nd Grade Resident, Oct., 1906; Asst. Resident, Dowa, April, 1907; Ag. Resident, Zomba, Nov., 1909. (C).

VERY, CECIL TYRRELL.—Ed. Malvern; Apptd. Clerk in Treasury, Nyasaland Prot., Aug., 1909.

WALKER, ARTHUR HENRY.—Junior Clerk, Educ. Dept. (Lond.), 1893; Clerk, Admiralty (London), Sept., 1897-1906; Served with Imperial Yeomanry, South Africa, 1902-3; Clerk in Treasury, Nyasaland Prot., Aug., 1906.

WALLIS, HENRY RICHARD.—Asst. Agent, Nyasaland Prot., Chinde, Sept., 1893; British Vice-Consul, Fort Johnston, Oct., 1897; 1st Class Assistant, July, 1898; Ag. Chief Judicial Officer,



Jan.-Nov., 1899; received Commission as H.M. Vice-Consul, June, 1900; Ag. Consul, Mozambique, Feb.-Dec., 1901; Vice-Consul, Tete, April, 1901; Ag. Deputy Commr., July, 1902 to Feb., 1903; Asst. Deputy Commr., April, 1904; Ag. Commr., May-Oct., 1905; Ag. Deputy Commr., March, 1907; Asst. Deputy Governor, Oct., 1907; Ag. Deputy Governor, Nov., 1907.

WARREN, EDGAR HERBERT.—S.Q.M.S. 28th Imperial Yeomanry, South Africa, 1902 (2 clasps); Transvaal Government Service (South African Constabulary, Civil), 1903-8; Lieut., Transvaal Horse Artillery, 1907; Clerk in Customs, Nyasaland Prot., 1908; Officer of Customs, 1909.

WEBB, FRANK.—3rd Asst., Nyasaland Prot., May, 1901; Asst. Collector, Liwonde, 1901-2; Fort Alston, 1902-3; Blantyre, 1903-4; Ag. Collector, Mlanje dist., April-May, 1904; Dedza, 1904-6; Asst. Resident, Zomba, Nov., 1906 to Feb., 1907; Ag. Resident, Chikala, Feb., 1907; Asst. Resident, Blantyre, Nov., 1907; Dedza, July, 1908; 2nd Grade Resident, March, 1908. (C).

WELLS, JOHN STUART.—Ed. Diocesan School, Monaghan, Ireland; Entered G.P.O. 1889; Nominated for Engineering Branch; Qualified under City of London Guilds (honours cert.), Telegraph and Telephone Engineering, Special Sub-Engineer's Certificate; Transf. to Nyasaland Prot., Feb., 1899; Postmaster, Ft. Johnston till Dec., 1901; 3rd Assistant Collector, Liwonde dist.; Magistrate and Ag. Collector at Liwonde, Mlanje, Chiromo and Chintechi; Dist. Magistrate and Collector, Port Herald, Lower Shire dist., Sept., 1905; Asst. Res., Karonga, 1909. (C).

WHEELER, WILLIAM, C.M.G. (June, 1904).—Treasurer, Nyasaland Prot., Feb., 1892.

WILKINS, CHARLES.—Clerk in Chief Surveyor's Office, Nyasaland Prot., May, 1902; Clerk in Treasury, Aug., 1905; 3rd Asst. Treasurer, Dec., 1908. (C).

WILLIAMS, ARCHIBALD JAY.—Clerk in Secretary's Office, Jan., 1895; Ag. Secretary to Admin., May-Oct., 1897; Asst. Secretary to Admin. (new post), Aug., 1897; Ag. Secretary, June, 1899 to April, 1901; Secretary to Admin., April, 1901; Chief Asst. Secretary, Govt. Secretary's Office, Oct., 1907 (new post on abolition of *Secretary to Administration* on re-organisation under "The Nyasaland Order in Council, 1907").

WOODARD, HENRY.—Government Storekeeper, Nyasaland Prot., 1893; Chief Commissariat Officer, 1894; Chief Transport Officer, 1906.

WYATT, ALEXANDER HENRY LOUIS.—Ed. Wellington; Served in Imperial Yeomanry, South Africa, 1900-1; Clerk in War Office, March, 1902; Clerk in Treasury, Nyasaland Prot., July, 1904; 3rd Grade Resident, Sept., 1905. (C).

WYKESMITH, PELHAM.—L.R.C.P. and S. (Edin.). Medical Officer, Nyasaland Prot., April, 1900.

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## HOLIDAYS, &c., 1910.

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22nd January	... Accession Day.
27th January	... Birthday of German Emperor.
25th March	... Good Friday (Government Offices closed).
28th March	... Easter Monday (Government Offices closed).
23rd April	... St. George's Day.
16th May	... Whit Monday.
24th May	... Empire Day (Government Offices closed).
9th August	... Coronation Day.
9th November	... Birthday of H.M. the King (Government Offices closed).
15th November	... Birthday of King of Portugal.
25th December	... Xmas Day (Government Offices closed).
26th December	... Boxing Day (Government Offices closed).

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# NYASALAND PROTECTORATE.

## Comparative Yearly Statement of the Revenue.

	Amount collected in the year 1907-8			Amount collected in the year 1908-9		
	£	s.	d.	£	s.	d.
Customs	14,515	3	7	13,872	1	2
Port, Harbour and Wharf Dues	4,329	3	2	4,138	19	4
Licences, etc.	3,954	7	11	3,715	14	0
Fees, etc.	1,546	10	1	1,118	1	1
Post Office	2,388	19	2	4,640	13	5
Native Hut Tax	36,605	17	0	38,388	15	0
Rents	2,521	3	11	1,977	16	0
Interest	78	5	2	33	17	5
Miscellaneous Receipts	1,001	14	5	1,965	17	11
	66,941	4	5	69,851	15	4
Land Sales	256	5	0	681	17	6
British South Africa Coy.'s contribution	8,000	0	0	10,000	0	0
Total ...	75,197	9	5	80,533	12	10

# NYASALAND PROTECTORATE.

## Comparative Yearly Statement of the Expenditure.

	Expenditure 1907-8			Expenditure 1908-9		
	£	s.	d.	£	s.	d.
Pensions.	1,289	12	2	1,212	9	10
The Governor.	2,836	13	7	2,614	14	1
Deputy Governor's Department	5,383	9	1	5,579	13	5
District Administration	20,418	10	4	21,200	13	2
Treasury	3,239	17	6	3,371	10	8
Customs	1,304	0	0	1,611	9	10
Audit	1,163	9	10	1,512	11	10
Marine Transport	4,510	10	3	4,352	1	6
Legal Department	2,250	16	6	2,270	10	5
Prisons	996	12	10	917	0	0
Medical Department } Hospitals	6,965	9	5	8,033	16	3
Transport	3,427	18	11	2,624	11	6
Military Expenditure	26,145	11	10	20,590	7	11
Miscellaneous	6,249	3	9	6,535	4	9
Post Office	4,075	0	4	4,903	6	9
Agricultural, Forestry & Botanic Departments	2,082	8	6	2,399	2	0
Public Works Department	4,814	3	9	5,333	6	9
Do. Annually recurrent	2,468	3	11	2,327	14	0
Do. Extraordinary	5,325	16	2	5,064	12	4
Bombay and London Agencies	639	10	0	577	12	3
Total ...	105,586	18	8	103,032	9	3

# CUSTOMS.

## Import Duties.

1. Save as hereinafter mentioned a duty of 10 per cent. *ad valorem* is charged on all goods imported into the Protectorate.

On distilled liquors and wine, beer and other fermented alcoholic liquors the import duties prescribed in "The British Central Africa Liquor Ordinance, 1904," "The British Central Africa Liquor (Amending) Ordinance, 1905," "The British Central Africa Liquor (Amending) Ordinance, 1906," *viz.* :—

(1). On all wines, beers and other fermented alcoholic liquors, import duty at the rate of 10 per cent. *ad valorem*.

(2). On all distilled liquors, except scents and perfumes hereinafter mentioned, import duty at the rate of 15/- per gallon proof spirit as ascertained by the Sykes' hydrometer, and so in proportion for any greater or less degree of strength, or any greater or less quantity.

(3). On scents and perfumes containing distilled and alcoholic liquors, import duty at the rate of 10 per cent. *ad valorem*.

(4). On preparations for manufacturing purposes containing alcohol (*viz.*, methylated spirit and the like preparations) mixed with naphtha in such quantities as to make them totally unfit for use as a potable spirit—the quantity of naphtha used being at least 10 per cent. by bulk or weight of the alcohol—import duty at the rate of 10 per cent. *ad valorem*.

The duty on whisky, brandy, rum and gin is calculated on the proof strength as shown by Sykes' hydrometer, at a temperature of as nearly as possible 80 degrees Fahrenheit. When such spirits are mixed with colouring, sweetening or other matter in solution, tending to conceal the actual strength, an addition of 5 per cent. is made to the apparent strength as shown by the hydrometer in lieu of the test for obscuration.

The strength of all liqueurs and other spirits so mixed or sweetened that they cannot be tested with the Sykes' hydrometer is assumed to be proof strength, and duty is charged on the proof gallon accordingly.

Six reputed quart bottles or 12 reputed pints are assumed to contain 1 liquid gallon.

2. The following imports are admitted free of duty :—

(1). Goods imported for the Governor.

(2). Current coin of the realm for circulation in the Protectorate.

(3). Agricultural implements and materials for making roads, bridges, railways, tramways and telegraphs and such machinery as the Comptroller of Customs shall decide to be for manufacturing and not domestic use.

(4). Materials to be used as coffee manure.

(5). Cotton seed.



(6). Bisulphide of carbon, corrosive sublimate, Paris green, London purple and insecticides of a similar nature.

(7). Vehicles—which include bicycles and any wheeled carriages or wheels or other parts of such carriages.

(8). Live stock.

(9). (a). Passengers' baggage—defined as the ordinary equipment with which a passenger would travel and includes clothes which have been worn, a reasonable quantity of jewellery which is in use by the passenger and which is not being imported except for personal use, bedding in actual use by the passenger, articles for the toilet, drugs, or books which are in actual use by the passenger.

New and unworn wearing apparel or any goods which are being imported by a passenger for the use of or on account of other persons are not considered personal baggage. No form of alcohol, no gun nor fire-arm nor weapon of any description is considered to be passengers' baggage, nor any drugs nor provisions other than those in actual use at the time of importation. the quantity of such goods in actual use to be limited to what may be considered by the Comptroller of Customs to be a reasonable amount for each passenger.

(b). Officers of troops stationed in the Protectorate are permitted to import in addition 1 pair of field glasses, 1 revolver or other pistol permitted by the Army Regulations and 100 rounds of ammunition for same, a sword and ordinary camp kit as passengers' baggage free of import duty.

(10). Samples, show cards and advertisements of no commercial value.

(11). Books.

(12). Officers entitled to wear the Civil Service uniform are allowed to import uniform and sword free of duty, as passengers' baggage or otherwise.

#### DRAW-BACKS.

A Draw-back of the 10 per cent. *ad valorem* import duty charged on gunny bags, gunny cloth, sacking and hooping and other materials imported into the Protectorate, and used for packing cotton or other produce of the Protectorate for export, is allowed, on proof being produced to the Comptroller of Customs that such materials have been *bonâ fide* so used and have left the Protectorate.

#### GENERAL.

The minimum sum to be paid for import duty is 3d.

#### REBATES.

A rebate of the full import duty on all goods lawfully re-imported into the Protectorate is allowed upon the following conditions:—

(1). That a Certificate, containing a full description of the article to be re-imported, be obtained from a Customs Officer at

the time of exportation, which Certificate must be attached to the Passenger's Declaration on re-importation.

(2). That the articles re-imported are those actually described in the Certificate and are re-imported within twelve months from the date of exportation.

A fee of 2/6 is charged for each "Re-importation Certificate."

### LANDING CHARGES.

1/- per ton is charged on all cargo landed in the British Concession at Chinde.

### Export Duties.

1. A duty of 9d. per lb. on all ivory.
2. A duty of 1d. per lb. on hippopotamus teeth and rhinoceros horns.
3. A duty of 4d. per lb. on all rubber other than rubber collected from cultivated trees or plants.
4. A duty of 1/- per ounce on gold other than gold coin.
5. A duty of 1/- per head on all sheep and goats permitted to be exported.

The following are the present assessed values of produce for export and transit export purposes:—

				£	s.	d.	
Coffee	...	...	...	0	0	5	per lb.
Tea	...	...	...	0	0	6	" "
Beeswax	...	...	...	0	1	0	" "
Chillies	...	...	...	0	0	4	" "
Cotton	...	...	...	0	0	5	- 1/- per lb.
Ginger	...	...	...	0	0	3½	per lb.
Groundnuts	...	...	...	0	0	1½	" "
Strophanthus	...	...	...	0	2	6	" "
Hippo' Teeth	...	...	...	0	2	0	" "
Cattle	...	...	...	3	0	0	per head.
Sheep	...	...	...	0	4	0	" "
Goats	...	...	...	0	3	0	" "
Ivory	...	...	...	0	10	0	per lb.
Oil seeds, Sesame	...	...	...	0	0	4	" "
" " Castor Oil	...	...	...	0	0	1	" "
Rubber	...	...	...	0	3	0	" "
" (uncultivated)	...	...	...	0	4	0	" "
Tobacco (unmanufactured)	...	...	...	0	0	6	" "
" (manufactured)	...	...	...	0	1	0	" "
Mica	...	...	...	0	0	6	" "
Tin (ingot)	...	...	...	150	0	0	per ton.
Copper (ingot)	...	...	...	80	0	0	" "
Copper Ore (treated)	...	...	...	40	0	0	" "
Copper Ore (untreated)	...	...	...	15	0	0	" "
Graphite	...	...	...	20	0	0	" "

		£	s.	d.	ton
Sisal Hemp	... ..	30	0	0	per <del>46</del> .
Mauritius Hemp	... ..	25	0	0	„ „
Sansevieria Fibre	... ..	25	0	0	„ „
Cotton Seed	... ..	5	0	0	„ „
Maize	... ..	2	0	0	„ „
Maize Flour	... ..	5	0	0	„ „
Rice	... ..	5	0	0	„ „
Potatoes	... ..	9	0	0	„ „

ROAD AND RIVER DUTIES, WHARFAGE DUES, REGISTRATION FEES,  
RE-IMPORTATION CERTIFICATES AND OTHER CHARGES.

1. Road and River Duties:—

In respect of all imports, whether for home use or consumption or in transit to places outside the Protectorate, there is charged 1/- per cwt. or fraction thereof as Road and River Duties.

No Road and River Duties are charged in respect of:—

- (1). Goods imported for the Governor.
- (2). Current coin of the realm imported for circulation in the Protectorate.
- (3). Live stock.
- (4). Books.
- (5). Civil Service Uniforms.

A rebate of road and river dues is granted in respect of all articles lawfully reimported into the Protectorate upon the same conditions as those set out in respect of the rebate of import duty under the like circumstances.

2. Wharfage Dues:—

In respect of all goods lawfully imported or exported and whether for home consumption or in transit  $\frac{1}{2}$  per cent. *ad valorem* as Wharfage. Dues are calculated in sums of not less than 3d.

No Wharfage Dues are charged in respect of:—

- (1). Goods imported for the Governor.
- (2). Imports or exports of current coin of the realm.
- (3). Imported live stock.
- (4). Books.
- (5). Civil Service Uniforms.

3. Registration Fee:—

In respect of all imports exempt from the payment of import duties, a Registration Fee of 6d. per package is charged.

No Registration Fee is charged in respect of:—

- (1). Goods imported for the Governor.
- (2). Imports of current coin of the realm for circulation in the Protectorate.
- (3). Cotton seed imported for sowing in the Protectorate.
- (4). Imported live stock.
- (5). Civil Service Uniforms.

4. Under "The Distilled and Alcoholic Liquor Ordinance, 1904," the following Customs charges are prescribed:—

- (1). Annual Licence to import alcoholic liquors for sale £10.

#### GOODS IN TRANSIT.

In respect of all goods in transit the following fees are charged:—

- |   |   |                      |
|---|---|----------------------|
| <ol style="list-style-type: none"> <li>(1). Road and River Duties</li> <li>(2). Wharfage Dues</li> <li>(3). Registration</li> </ol> | } | as prescribed above. |
|---|---|----------------------|

#### KING'S WAREHOUSE AND BONDED STORES.

King's Warehouses are established at Chiromo and Port Herald for the reception of goods seized by the Customs, unclaimed or abandoned goods, and merchandise deposited by an importer pending the payment of Customs charges. Bonded stores, the property of merchants who have deposited security with the Customs for the duties payable on goods removed to such stores, have been opened at Chiromo, Blantyre, Fort Johnston and Port Herald.

The following fees are charged in respect of King's Warehouses and Bonded Stores:—

- (1). Permit to remove alcoholic liquors, 2/6.
- (2). Rent in King's Warehouses, for each package, per month or part thereof, 6d.

#### HOURS OF ATTENDANCE OF CUSTOMS OFFICERS AT CHIROMO AND PORT HERALD.

Monday, Tuesday, Wednesday, Thursday and Friday from 8 a.m. till 11 a.m. and from 1 p.m. till 4 p.m. Saturday 8 a.m. till 12 noon.

In respect of attendance at hours other than those prescribed above, and on Sundays and Public Holidays for attendance at any hour, the following fees are charged:—

Customs charge:—£1 per hour or fraction thereof with a maximum of £5 per diem.

Fees personal to each Customs Officer engaged—5/- per hour or fraction thereof with a maximum of £1. 5s. per diem.

The Comptroller of Customs may at his discretion direct the attendance at any hour of Customs Officers without remuneration in the case of ships carrying His Majesty's Mails, or for such other duty as the exigencies of the Public Service may require.

The following are prescribed as public holidays on which days there will be no attendance of Customs Officers at Chiromo or Port Herald except by direction of the Comptroller of Customs:—

Good Friday, Easter Monday, Empire Day, King's Birthday, Christmas Day and Boxing Day and such other day or days as may be specially declared to be public holidays.

## ARTICLES PROHIBITED TO BE IMPORTED.

The importation of any of the following goods is prohibited, whether for home use or consumption or in course of transit, that is to say:—

(a). False or counterfeit coin, or coin not of the established standard in weight or fineness, or counterfeit bank notes, postal orders or money orders, bonds and the like.

(b). Indecent or obscene prints, paintings, photographs, books, cards, lithographs or other engravings, or any other indecent or obscene articles.

(c). Provisions which are unfit for human food.

(d). Any seeds or plants the importation of which is prohibited by or under any Regulations, Ordinances or Rules now in force or hereinafter enacted.

(e). Cattle, sheep or other animals the importation of which is for the time being prohibited by or under any Regulations, Ordinances or Rules now in force or hereafter enacted.

(f). Any goods the importation of which is for the time being prohibited by any proclamation made by the Governor for the protection of the public health or other purposes of public policy.

(g). Articles of foreign manufacture bearing the name, address or trade-mark of any manufacturer of or a dealer in such articles resident in the United Kingdom or in any British possession or Protectorate, or in Cyprus, or bearing the name of any place in the United Kingdom or any British possession or Protectorate, or in Cyprus, and calculated to impart to them a special character of British manufacture.

(h.) Machine-guns, breech-loading rifles, cannons, magazine-guns or other fire-arms and their cartridges, bullets, shot, or other ammunition: Provided that the Governor may by licence authorize any person to import, whether for home use or in course of transit, any specified arms or ammunition. Such licence shall be in the form and be granted on payment of the stamp duty, for the time, and under the conditions and limitations which the Governor may prescribe and may be revoked, varied or suspended by the Governor whenever he may think fit.

Any person importing goods in breach of this section or being in any way concerned in such importation, is liable to imprisonment for any period not exceeding three months, or to a fine not exceeding £50, or to both, and the goods in respect of which the offence was committed may be forfeited.

## IMPORTATION OF SEEDS AND PLANTS.

(1). The importation of seeds or living or dried plants from certain countries is prohibited except on the written authority of the Governor. To obtain this permission it is necessary for the importer to prove that the seeds or plants are derived from places entirely unlikely to lie within the scope of the coffee leaf disease.



(2). Any seeds or plants arriving from an infected country not accompanied by a permit of the above nature will be immediately destroyed by the officers of Customs. Seeds or plants arriving from other than prohibited countries must be accompanied by reasonable proof of origin (such as invoices, bills of lading or certificates of origin).

(3). Any attempt to introduce seeds or plants into Nyasaland except through a recognised port of entry will be considered as an act of smuggling.

*List of "Infected Countries."*

India, Straits Settlements, Natal, Zanzibar, Ceylon, Dutch East Indies, Mauritius, German East Africa, Guatemala and Central American States, Congo Free State.

Seeds or plants of the Albizzia tree can only be imported when grown in Australia.

The importation of cotton seed, except Egyptian cotton seed grown in Egypt, is prohibited.

All cotton seed has to be disinfected at Chiromo before being allowed to enter the Protectorate.

Under paragraph 6 of the Game Regulations, 1902, it is prohibited to *export* any part of any animal killed or captured in contravention of the said Regulations.

DIGEST OF CUSTOMS REGULATIONS.

*Shipping and Importation Rules.*

(1). All vessels arriving within the limits of any port in the Protectorate must come up quickly to the proper place of mooring or unloading, without touching at any other place and shall not remove from that place except to some other place of mooring or unloading.

(2). Any Officer of the Customs may board any ship arriving at any place within the Protectorate and stay on board until all cargo has been discharged, or the ship has been cleared and has departed from the limits of the port. No goods are to be landed except with the authority or in the presence of a Customs Officer.

(3). The Master of every ship must within 24 hours of his arrival make a report in the proper form to the Officers of the Customs. Such report must contain a full description of all cargo laden on board the vessel. The Importer or his agent shall immediately upon the entry of any goods intended for home consumption pay the duties leviable upon such goods.

(4). Immediately on arrival at any port in the Protectorate of any ship all alcoholic liquors upon which duty is not paid must be declared and shall be placed under seal by the Customs, until the vessel has again passed out of Protectorate waters.

(5). If entry is not made and goods not landed from a ship within fourteen days after the arrival of such ship, the goods may be removed to a King's Warehouse, and if the duties are not paid within one month afterwards the goods may be sold and

the proceeds thereof applied as directed by the Customs Ordinance, 1906. Perishable goods may be sold immediately. The ship may be detained for expenses of guarding the cargo beyond fourteen days after arrival. All expenses incurred in connection with the checking or examination of goods must be borne by the importer.

(6). Any warehoused goods not cleared within one year may be sold or destroyed. No compensation shall be made to any importer for damage which goods may receive while in any warehouse.

(7). A person shall be deemed guilty of smuggling who smuggles or imports into or exports from any place any goods with intent to avoid payment of any Customs duty, or any goods the importation or exportation whereof (as the case may be) into or from such place is prohibited, or who attempts to smuggle, import or export any such goods, or who aids or abets any other person in the commission of any such offence.

A person convicted of smuggling shall be liable to imprisonment for any term not exceeding three months, or to a fine not exceeding £100, or to both; and any goods smuggled shall be declared forfeited to His Majesty, together with any ship, boat, cask, case, carriage, wagon or other receptacle wholly or partly belonging to the offender and containing such goods, or used in the commission of the offence.

(8). Any person who shall bribe or attempt to bribe any official to do anything contrary to the provisions of the Customs Ordinance, 1906, or to refrain from doing anything ordered to be done by or under that Ordinance shall be guilty of an offence and upon conviction liable to a fine not exceeding £100 or three months' imprisonment or both.

(9). The full Customs laws are contained in the Consolidating Customs Ordinance, No. 8 of 1906, and in notices and rules subsequently published in the Government Gazette.

#### CUSTOMS STATIONS.

The following are Customs and Transit Stations:—Port Herald, Chiromo, Chikwawa, Neno, Blantyre, Ncheu, Fort Johnston, Kota Kota, Nkata, Chintechi, Karonga, Lilongwe, Dowa, Dedza, Fort Anderson, and Fort Mlangeni. The Residents and Assistant Residents at these stations (except Chiromo) are appointed Officers of Customs under Section 8 (d) of the Consolidating Customs Ordinance, 1906. The Postmasters at Zomba, Blantyre, Fort Johnston, Chiromo and Port Herald are also appointed Officers of Customs to deal with postal packages only.

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# LICENCES, &c.

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## 1. BANK LICENCE.

<i>(Under the Banking Ordinance, No. 2 of 1902).</i>		£	s.	d.
For every Licence granted to any Incorporated Bank or Joint Stock Company to carry on the business of Bankers	... ..	25	0	0

## 2. FIRE-ARMS AND AMMUNITION.

<i>(Under the Fire-arms and Ammunition Ordinance, No. 6 of 1908).</i>				
Licence to import Fire-arms or Ammunition	...	0	2	6
<i>(By Proclamation of 7th July, 1908).</i>				
Annual Licence to own, possess, use or carry muzzle-loading fire-arms	... ..	0	4	0
Annual Licence to own, possess, use or carry breech-loading fire-arms	... ..	0	10	0
Annual licence to deal in arms and ammunition...		15	0	0
<i>(Under the Fire-arms and Ammunition Amendment Ordinance, 1908).</i>				
Permit to sell or transfer fire-arm or ammunition (other than by a licensed dealer)	... ..	0	0	6
Permit to purchase or receive fire-arm or ammunition	... ..	0	2	6

## 3. INTOXICATING LIQUORS.

<i>(Under the Distilled and Alcoholic Liquors Ordinance, No. 6 of 1904).</i>				
Licence to import alcoholic liquors	... ..	10	0	0
Annual Licence to sell alcoholic liquors	... ..	30	0	0
Licence to sell beer, spirits and wine away from licensed premises, per day, not exceeding 6 days		0	2	6
Permit to remove alcoholic liquors from Bond or King's Warehouse (for each consignment)	...	0	2	6

## 4. PERFUMES AND SCENTS.

<i>(Under Ordinance No. 1 of 1906, and Notice dated 31st January, 1906).</i>				
Licence to sell scents and perfumes containing distilled or alcoholic liquors	... ..	3	0	0

## 5. HUT TAX (NATIVE).

<i>(Under the Native Hut Tax Regulations, No. 5 of 1901).</i>				
On each hut owned by a Native who has not worked one month for a European, per annum...		0	6	0
On each hut owned by a Native who has worked one month for a European, per annum	...	0	3	0

## 6. TRADING LICENCE.

<i>(Under the Stamp Duties Regulations, 1895).</i>				
Annual Licence for any Trader (not being a Native of the Protectorate) to trade within the Protectorate	... ..	10	0	0

	£	s.	d.
7. GAME LICENCE.			
<i>(Under the Game Regulations of 1902).</i>			
Annual Game Licence "A" ... ..	25	0	0
" " "B" ... ..	4	0	0
" " "C" ... ..	2	0	0
8. MARRIAGE LICENCE.			
<i>(Under the Marriage Ordinance, No. 3 of 1902).</i>			
Special Licence ... ..	1	0	0
9. APPRAISER'S LICENCE.			
<i>(Under the Stamp Duties Regulations, 1895).</i>			
Appraiser's or House Agent's Annual Licence ...	1	0	0
10. AUCTIONEER'S LICENCE.			
<i>(Under the Stamp Duties Regulations, 1895).</i>			
Auctioneer's Annual Licence ... ..	5	0	0
11. PLEADER'S LICENCE.			
<i>(Under the Legal Practitioners Rules, 1908).</i>			
Pleader's Licence to practice in any Court of the Protectorate, upon admission ... ..	25	0	0
Annual licence to practice ... ..	5	0	0
12. MINING.			
<i>(Under the Mining Ordinance, No. 2 of 1906).</i>			
Prospector's Licence, per six months ... ..	1	0	0
Miner's Right, per month ... ..	1	0	0
Licence to deal in precious metals or precious stones, for each place of business ... ..	10	0	0
13. SURVEYING.			
<i>(Under Land Surveyors' Regulations, 1897).</i>			
On issue of Surveyor's licence on qualification...	2	2	0
14. SHIPPING.			
<i>(Under Ordinance No. 1 of 1902).</i>			
Issue of Certificate of Competency on examination	5	0	0
ANNUAL SURVEY OF VESSELS.			
<i>(Levied under the Shipping Ordinance, 1902).</i>			
Fees payable on each annual survey:—			
(a). On vessels of 15 tons burthen and upwards	3	0	0
(b). On vessels of less than 15 tons burthen, navigated by steam ... ..	2	0	0
15. HAWKER'S LICENCE.			
<i>(Under the Stamp Duties Regulations, 1895).</i>			
Annual licence for any Hawker (not being a Native of the Protectorate) ... ..	4	0	0
16. POISON AND OPIUM.			
<i>(Under the Poison and Opium Regulations, 1901).</i>			
Licence to deal in Poisons ... ..	0	10	0
Licence to sell opium and bhang by wholesale ...	25	0	0
Licence to sell opium and bhang by retail ...	10	0	0

## Other Stamp Duties.

£ s. d.

*(Under the Stamp Duties Regulations, 1895).*

Agreement or memorandum of agreement under hand only, not otherwise specifically charged with any duty ... .. 0 0 6

## Exemptions:—

1. Agreement, or memorandum, the matter whereof is not of the value of £5.

2. Agreement, letter, or memorandum made for or relating to the sale of any goods, wares, or merchandise.

Appraisement or valuation of any property or of any interest therein, or of the annual value thereof, or of any materials or work—

Where the amount of the appraisement or valuation does not exceed £5 ... .. 0 0 3

Exceeds £5 and does not exceed £10 ... .. 0 0 6

„ £10 „ „ £20 ... .. 0 1 0

„ £20 „ „ £30 ... .. 0 1 6

„ £30 „ „ £40 ... .. 0 2 0

„ £40 „ „ £50 ... .. 0 2 6

„ £50 „ „ £100 ... .. 0 5 0

„ £100 „ „ £200 ... .. 0 10 0

„ £200 „ „ £500 ... .. 0 15 0

„ £500 ... .. 1 0 0

## Exemptions:—

Appraisement or valuation made for, and for the information of one party only, and not being in any manner obligatory as between parties either by agreement to operation of law.

Apprenticeship Indentures, each ... .. 0 2 3

Bill of Exchange, or promissory note of any kind (except a bank-note) drawn or expressed to be payable or actually paid or indorsed, or in any manner negotiated within the Protectorate—

If payable on demand ... .. 0 0 1

If otherwise, and the amount does not exceed £5 ... .. 0 0 1

Exceeds £5 and does not exceed £10 ... .. 0 0 2

„ £10 „ „ £25 ... .. 0 0 3

„ £25 „ „ £50 ... .. 0 0 6

„ £50 „ „ £75 ... .. 0 0 9

„ £75 „ „ £100 ... .. 0 1 0

„ £100, then for every £100, and also any fractional part of £100 of such amount or value 0 1 0

Bill of Lading of or for any goods, merchandise, or effects ... .. 0 0 6

## Bill of sale—

Absolute. See Conveyance.

As security. See Mortgage.



	£	s.	d.
Certificate of goods being duly entered inwards for drawback ... ..	0	4	0
Re-importation Certificate ... ..	0	2	6
Cheque. See Bill of Exchange.			
Conveyance or Transfer on sale of any property—			
Where the amount or value of the consideration does not exceed £5 ... ..	0	0	6
Exceeds £5 and does not exceed £10 ... ..	0	1	0
„ £10 „ „ £15 ... ..	0	1	6
„ £15 „ „ £20 ... ..	0	2	0
„ £20 „ „ £25 ... ..	0	2	6
„ £25 „ „ £300, for every £25 and also for every fractional part of such value ... ..	0	2	6
„ £300, for every £50, and also for every fractional part of such value ... ..	0	5	0
Conveyance or transfer of any kind not hereinbefore described ... ..	0	10	0
Debenture or certificate entitling any person to receive any allowance by way of drawback—			
Where the allowance to be received—			
Does not exceed £10 ... ..	0	2	0
Exceeds £10 and does not exceed £50 ... ..	0	2	6
„ £50 ... ..	0	5	0
Deed of any kind not otherwise specially charged in the Schedule ... ..	0	10	0
Contract for service of Native Labourers in the Protectorate, for each native engaged ... .. (Authority: <i>Order dated 31st December, 1904</i> ).	0	0	6
Contract for service of Native Labourers outside the Protectorate, for each native engaged ... .. (Authority: <i>Order dated 31st December, 1904</i> ).	0	1	0
Pass to native leaving the Protectorate ... .. (Authority: <i>Order dated 31st December, 1904</i> ).	0	0	6
Duplicate or counterpart of any instrument chargeable with any duty—			
Where such duty does not amount to 5s. ... { The same duty as the			
In any other case ... ..	0	5	0
Lease—			
1. For any definite term less than a year—			
(a). Where rent does not exceed £25 ... ..	0	0	6
(b). „ „ exceeds £25 ... ..	0	2	6
2. For any other definite term or for any indefinite term—			
For each £25, and every fractional part of £25 of the rent			

	£	s.	d.
If the term is definite and does not exceed 7 years ... ..	0	2	6
If the term is definite and does not exceed 14 years ... ..	0	5	0
If the term exceeds 21 years or is indefinite ...	0	10	0
3. Of any other kind whatsoever not hereinbefore described ... ..	0	10	0
<b>Marketable Security—</b>			
1. Marketable security being either (a) a Colonial Government security or (b) a security not transferable by delivery— For or in respect of the money thereby secured	The same <i>ad valorem</i> duty as upon a mortgage.		
2. Transfer or assignment of a marketable security of any description— Upon a sale thereof. See Conveyance or Transfer on Sale. Upon a mortgage thereof. See Mortgage of Stock or Marketable Security In any other case than a sale or mortgage ...	0	10	0
3. Marketable security other than a Colonial Government security being a security transferable by delivery— For every £10, and also for any fractional part of £10 of the money thereby secured ...	0	1	0
<b>Mortgage, Bond, Debenture or Covenant not being a marketable security otherwise specially charged with duty—</b>			
1. Being the only or principal, or primary security other than an equitable security for the payment or repayment of money— Not exceeding £10 ... ..	0	0	3
Exceeding £10, but not exceeding £25 ...	0	0	8
„ £25 „ „ £50 ...	0	1	3
„ £50 „ „ £100 ...	0	2	6
„ £100 „ „ £150 ...	0	3	9
„ £150 „ „ £200 ...	0	5	0
„ £200 „ „ £250 ...	0	6	3
„ £250 „ „ £300 ...	0	7	6
„ £300, for every £100 and also for every fractional part of £100 of the amount secured ... ..	0	2	6
2. Being a collateral or additional or substituted security (other than an equitable mortgage), the principal security having been duly stamped— For every £100, and also for every fractional part of £100 of the amount secured ... ..	0	0	6

	£	s.	d.
3. Being an equitable mortgage—For every £100, and any fractional part of £100 of the amount secured ... ..	0	1	0
4. Transfer or assignment of any mortgage, bond, debenture or covenant except a marketable security— For every £100, and also for any fractional part of £100, of the amount transferred or assigned	0	0	6
5. Reconveyance, release, discharge, surrender or renunciation of any such security as aforesaid, for the benefit thereof, or of the money thereby secured— For every £100, and also for any fractional part of £100 of the total amount or value of the money at any time secured ... ..	0	0	6
Mortgage of Stock or Marketable Security— Under hand only. See Agreement. By deed. See Mortgage, &c.			
Power of Attorney— Appointment of proxy to vote at any meeting ...	0	0	1
Any other power of Attorney ... ..	0	10	0
Receipt given for or upon the payment of money amounting to £2 or upwards ... ..	0	0	1

Exemptions:—

1. Receipt given for or upon the payment of any duties, taxes or money to or for the use of the Government of the Protectorate.
2. Receipt given by any person in respect of any salary, wages, remuneration or pension due or paid by the Government of the Protectorate.
3. Receipt indorsed on or written upon any instrument liable to stamp duty and duly stamped, acknowledging the receipt of any money therein expressed or thereby secured.
4. Receipt given for drawback or bounty upon the exportation of any goods or merchandise.
5. Receipt given for money deposited in any bank or with any banker to the account of any person.

FEES TAKEN IN THE OFFICE OF GOVERNOR.

Special Marriage Licence ( <i>Under Ordinance No. 3 of 1902</i> ) ... ..	1	0	0
Passport ( <i>Under Regulations of 31st July, 1905</i> ) ...	0	5	0

FEES TAKEN IN THE OFFICE OF DEPUTY GOVERNOR.

Registration of Medical Practitioner ( <i>Under Ordinance No. 9 of 1906</i> ).	<div>                     {Such fee not exceeding £5 as Medical Committee may decide.                 </div>		
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	£	s.	d.
FEES TAKEN IN LANDS AND SURVEY OFFICE.			
<i>(Under Regulations, 1895).</i>			
Preliminary Fees for each application ... ..	2	0	0
„ „ „ Township Allotments ... ..	1	10	0
Survey Fee, per mile ... ..	2	0	0
„ „ for trained Linesman, Indian or Native, per day ... ..	0	1	0
Clearing, per mile ... ..	1	0	0
Beacons, each ... ..	0	2	6
Plans—according to acreage of estate, upwards from Indorsements of Tracings on title Deeds—50 per cent. of cost of plan, each.	0	10	0

## FEES TAKEN BY THE COMPTROLLER OF CUSTOMS.

## SHIPPING REGISTRATION.

*(Rules under Shipping Regulations, 1900).*

## Upon Registration of a Vessel—

(a). First Class, vessels of 15 tons burthen and upwards ... ..	4	0	0
(b). Second Class, vessels of less than 15 tons navigated otherwise than by oars, paddles or poles only ... ..	3	0	0
(c). Third Class, boats navigated by oars, paddles or poles only ... ..	2	0	0
Issue of every Certificate of Registry (by Rule dated 31st January, 1907) ... ..	0	2	6

## FEES TAKEN IN THE OFFICE OF H.M. JUDGE.

*(Under the Legal Practitioners Rules, 1908).*

Admission of Pleader ... ..	25	0	0
Pleader's annual licence ... ..	5	0	0
Admission of Native Law Agent ... ..	1	0	0
Native Law Agent's annual licence ... ..	1	0	0

## FEES TAKEN BY INSPECTOR OF WEIGHTS AND MEASURES.

*(Under Ordinance No. 7 of 1905).*

On verification of each weight ... ..	0	0	3
„ „ „ balance ... ..	0	0	6

## FEES TAKEN BY THE MARRIAGE REGISTRARS.

*(Under Ordinance No. 3 of 1902).*

Marriage—Filing every notice and entering same ...	0	3	0
On issue of each certificate and certified copy thereof	0	2	0
Certifying any extract ... ..	0	2	0
On every Marriage in Registrar's Office ... ..	0	4	0

## FEES TAKEN BY REGISTRARS OF BIRTHS AND DEATHS.

*(Under Ordinance No. 2 of 1904).*

On Registration of a Birth ... ..	0	2	6
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	£	s.	d.
On a Certified Copy of an entry in the Register of Births and Deaths ... ..	0	2	6
On Inspection of Register, Return or Index ...	0	2	6
On Registration of name under Section 7 of "The Births and Deaths Ordinance, 1904" ... ..	0	2	6

## SCALE OF FEES LEVIED IN THE HIGH COURT OF NYASALAND.

(Under the High Court Practice and Procedure Ordinance,  
No. 3 of 1906).

*Service.*

1. For service of summons, petition, answer, motion-paper, notice, warrant, decree, order, or other document on a party, witness, juror, assessor or other person under any branch whatever of the Civil Jurisdiction—

Within one mile (English) of Court ...	0	2	6
Beyond, for every further complete mile ...	0	1	0

*Decision of Questions without Formal Suit.*

2. On summons for issue or special case ... .. 1 0 0
3. On issue or special case ... .. 0 10 0
4. On hearing ... .. 1 0 0

*Summary Procedure for Administration of Property of Deceased Persons.*

5. On summons ... .. 1 0 0
6. On order ... .. 1 0 0

*Summary Orders before Suit.*

7. On application for order ... .. 0 10 0
8. On recognizance ... .. 0 10 0
9. On order ... .. 0 5 0

*Bankruptcy and Liquidation by Arrangement or Composition*

10. On declaration by a debtor of inability to pay his debts ... .. 0 5 0
11. On debtor's summons ... .. 0 5 0
12. On bankruptcy petition ... .. 5 0 0
13. On petition for arrangement or composition ... 1 0 0
14. On order for adjudication ... .. 1 0 0
15. On meeting or adjournment of meeting ... .. 1 0 0
16. On special resolution presented to the Registrar for registration { 1 per cent. on the gross amount of the assets, not exceeding a total fee of £200
17. On extraordinary resolution presented to the Registrar for registration { 1 per cent. on the gross amount of composition, not exceeding a total fee of £200.
18. On order of discharge ... .. 2 0 0
19. On notice to creditors ... .. each 0 0 3
20. On preparing advertisement ... .. 0 5 0



	£	s.	d.
21. On execution of warrant ... ..	1	0	0
22. On keeping possession ... .. per diem	0	10	0
23. On inventory ... .. „ „	1	0	0
<i>Probate and Administration.</i>			
24. On application for probate or administration ...	1	0	0
25. On oath for every executor, and administrator, and surety, or on renunciation by an executor...	0	10	0
26. On every security ... ..	1	0	0
27. On probate or administration	{ The like sum as is payable in England under the Finance Acts of 1894 and 1896, or under any statutes which may at any time hereafter be substituted therefor. Death duties in accordance with the aforesaid Acts shall be levied on realty and chattels real.		
28. Where the Court appoints as admini- strator an officer of the Court	{ In addition to the foregoing 1 per cent. on the value of the estate and effects.		
29. On filing account ... ..	0	10	0
30. On passing account... ..	1	0	0

*Ordinary Suits.*

	On Summons or Petition.	On Hearing.
31. In every suit of any kind whatever, other than such as are before specified ... ..	3d. in the £ not exceeding a total of 25l., but in no case less than 2s. 6d.	3d. in the £ not exceeding a total of 25l., but in no case less than 2s. 6d.
32. Where judicial relief or assistance is sought, but not the recovery of money ... ..	£    s.    d. 1    0    0	£    s.    d. 1    0    0
33. On every summons, motion, application, notice or demand taken out, made or filed (not parti- cularly charged) ... ..		0    5    0
34. On every rule ... ..		0    10    0
35. On every decree or order (not particularly charged) ... ..		0    2    6
36. On motion for new trial ... ..		1    0    0
37. On order for adjournment of hearing rendered necessary by default of either party (to be paid by that party) ... ..		0    7    6
38. On every warrant of execution against goods— For less than 50l. ... ..		0    5    0
For 50l. or upwards ... ..		1    0    0
39. For keeping possession ... .. per diem		0    10    0

*Appeal to the High Court.*

40. On lodging notice of appeal ... ..	0	10	0
41. On motion for leave to appeal ... ..	0	10	0
42. On every security ... ..	0	10	0
43. On order for leave to appeal ... ..	1	0	0

	On Petition or Motion.	On Hearing.
	£ s. d.	£ s. d.
44. On appeal against adjudication of bankruptcy ... ..	5 0 0	2 0 0
45. On appeal against allowance, suspension, or refusal of order of discharge in bankruptcy ... ..	5 0 0	2 0 0
46. On appeal where judicial relief or assistance is sought, but not the recovery of money ... ..	2 0 0	2 0 0
47. On any appeal other than such as are before specified ... ..	$\frac{1}{2}$ per cent. on amount involved not exceeding a total fee of 25 <i>l.</i> , but in no case less than 5 <i>s.</i>	
	$\frac{1}{2}$ per cent. on amount involved not exceeding a total fee of 25 <i>l.</i> , but in no case less than 5 <i>s.</i>	

48. On every application, motion, order or rule not particularly charged ... .. 0 10 0

*Appeal from High Court to Eastern Africa  
Protectorates Court of Appeal.*

49. On motion for leave to appeal where subject matter is less than £70 in value... .. 0 10 0
50. On every security ... .. 0 10 0
51. On order for leave to appeal ... .. 1 0 0
52. On filing memorandum of appeal... .. 2 0 0
53. On application or order to amend memorandum of appeal ... .. 0 10 0
54. On every application, motion, order or rule, not particularly charged ... .. 0 10 0

*Miscellaneous.*

55. On taxation of any bill of costs, for every 10 folios, from each party to the taxation ... .. 0 5 0
56. On every deposition taken before trial ... .. 0 10 0
57. On balances of estates of deceased persons {  $2\frac{1}{2}$  per cent.  
paid into Court otherwise than in a suit } on amount.
58. On registration or registration and deposit of any deed (except power of attorney) ... .. 1 0 0
59. On registration or registration and deposit of a power of attorney ... .. 0 5 0
60. On registration or registration and deposit of any other document ... .. 0 5 0
61. For taking inventory (per hour, with maximum of 4*l.* per diem) ... .. 1 0 0
62. On notice of bill of sale filed ... .. 1 0 0
63. For protest of a bill of exchange, and copy ... .. 1 0 0
64. For noting a bill of exchange ... .. 0 5 0
65. For copy of such notation... .. 0 2 6
66. For taking an affidavit ... .. 0 5 0

	£	s.	d.
67. For every exhibit ... ..	0	2	6
68. For drawing a will—			
If not exceeding 200 words ... ..	1	0	0
For every subsequent 100 words or part thereof	0	5	0
69. For drawing deeds and other documents in duplicate whereby Crown lands are transferred or leased by the Government—			
In the case of Leases:—			
Not exceeding 25 acres ... ..	0	10	0
Exceeding 25 and not exceeding 50 acres ...	1	0	0
Exceeding 50 and not exceeding 100 acres ...	1	10	0
Exceeding 100 and not exceeding 250 acres...	2	0	0
Exceeding 250 and not exceeding 500 acres...	3	0	0
Exceeding 500 acres ... ..	4	0	0
In the case of Transfers:—			
Not exceeding 25 acres ... ..	1	0	0
Exceeding 25 and not exceeding 50 acres ...	1	10	0
Exceeding 50 and not exceeding 100 acres ...	2	0	0
Exceeding 100 and not exceeding 250 acres...	3	0	0
Exceeding 250 and not exceeding 500 acres...	4	0	0
Exceeding 500 acres ... ..	5	0	0
For drawing any other deeds in duplicate, if not exceeding 1,500 words ... ..	4	0	0
For every subsequent 100 words or fraction thereof	0	5	0
70. For drawing any other document (not particularly charged)—			
For the first 100 words ... ..	0	5	0
For every subsequent 100 words or part thereof	0	2	6
71. For certifying signature or seal ... ..	0	5	0
72. For a certified copy of document minimum	0	10	0
For every 100 words or part thereof after 200 words ... ..	0	1	0
73. For an official certified translation of any document—			
For first 100 words ... ..	0	10	0
For every further 100 words or part thereof...	0	5	0
74. For certifying a copy of any document or part of a document—			
If not exceeding 100 words ... ..	0	5	0
For every subsequent 100 words or part thereof	0	1	0
75. For attaching documents under official seal ...	0	2	6
76. On reference to the archives ... ..	0	2	6
77. For attendance at a sale—			
At request of parties interested or of local authorities, if absent less than two hours ...	2	0	0
At request of parties interested, for each additional hour or part thereof (with a maximum per day of 4 <i>l.</i> ) ... ..	0	10	0
78. For communication between two Courts ...	0	10	0

	£	s.	d.
79. For communication in writing to a foreign Consulate or to local or foreign authority ...	0	10	0
80. For filing a request for survey and issuing order for survey ... ..	0	10	0
81. For receiving report of survey, filing original and making certified copy of request, order and report of survey (if not exceeding in all 200 words) ... ..	1	0	0
For every subsequent 100 words or part thereof...	0	1	0
82. For attendance of the Registrar or other Officer of the Court at any other Court, Office, or Tribunal, such sum as the Court may direct, and reasonable travelling expenses, not exceeding per diem ... ..	4	0	0
83. For attendance of an Interpreter at any Court, if required by a party in a suit, or ordered by the Court, such sum as the Court may direct, but not exceeding per diem ... ..	3	0	0

*Criminal Matters.*

84. On every summons or warrant, unless specially directed by the Court to be issued ... ..	0	5	0
85. On hearing in summary case ... ..	0	5	0
86. On warrant of commitment ... ..	0	2	6
87. On recognizance ... ..	0	1	0
88. For service of notice on each juror or assessor...	0	2	6
89. On trial either with or without a jury or assessors	1	0	0
90. On record of sentence on a trial ... ..	1	0	0

*Native cases (Civil or Criminal).*

91. On summons and service, chargeable at discretion of a Judge, not exceeding ... ..	0	1	0
92. On hearing and judgment... ..	0	1	0

*Appeal from Subordinate Court to High Court.*

93. On appeal or transference to the High Court, not exceeding ... ..	0	2	6
94. On hearing and judgment of such appeal or transference, not exceeding ... ..	0	2	6

## LEGAL.

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### Judicial Department.

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#### Protectorate Magistrates.

All Residents in charge of Districts hold Magistrates' Warrants authorising them to hold District and District Native Courts. Assistant Residents (with few exceptions) hold warrants as Assistant Magistrates authorising them to hold Sub-District Native Courts.

##### (1) System of Courts.

On the 14th May, 1891, the territories now known as Nyasaland were notified as being under the Protectorate of Her Majesty Queen Victoria, and became in consequence a local jurisdiction within the meaning of the "Africa Order in Council, 1889." Under this Order in Council Courts presided over by holders of Consular Commissions and Judicial Warrants were established for the various districts into which the Protectorate was divided. These Courts had jurisdiction over all British subjects within their respective districts and also over foreigners who submitted themselves to their jurisdiction. The "Africa Order in Council, 1892," extended this jurisdiction by rendering all foreigners being and resident within the Protectorate who were subjects of powers signatory to the General Act of the Berlin Conference, 1885, justiceable before them under the same conditions as British subjects. All holders of Consular Commissions and Judicial Warrants had equal jurisdiction in their respective districts. There was no local supreme Judicial Authority, and appeals lay to the Supreme Court of Cape Colony. In 1898 the post of Chief Judicial Officer was created, but no appellate jurisdiction was vested in the Officer holding this post. He was merely *primus inter pares*, and appeals as hitherto lay to Cape Colony.

Side by side with the Courts created under the "Africa Order in Council, 1889," there existed another class of Courts, presided over by Collectors. In these Courts native cases were dealt with and the theory underlying the exercise of their juris-



diction was that they exercised the delegated functions of the native chiefs. The establishment of Great Britain as the protecting power would of itself under the circumstances prevailing in the Protectorate probably have been sufficient to support this theory, but inasmuch as all the Protectorate Chiefs with the consent of their peoples had by treaty surrendered their possessions and sovereign rights to the Crown no such theory was ever necessary to justify the exercise of this jurisdiction. The word Protectorate is susceptible of an infinity of shades of meaning. It may mean anything from the right of the protecting power to exercise a control over the foreign relations of the power protected to the exercise of the fullest control over the protected power's internal administration and foreign policy. In the case of Nyasaland the Crown would appear to have acquired by cession rights indistinguishable from those possessed in any British Colony or possession.

The system of Courts mentioned above was found to present various features of difficulty, and a considerable amount of uncertainty as to jurisdiction and other inconveniences were experienced from time to time. Among other things the appeal to Cape Colony was felt to be unsatisfactory. To remedy this and other matters requiring amendment in 1902 the "British Central Africa Order in Council" and the "Eastern Africa Protectorates (Court of Appeal) Order in Council" were passed.

The "British Central Africa Order in Council, 1902," created a High Court of British Central Africa (now, since the Nyasaland Order in Council, 1907, the High Court of Nyasaland) and conferred on this Court full jurisdiction, civil and criminal, over all persons and all matters in the Protectorate. The Order in Council also authorised the creation of Courts Subordinate to the High Court and these Courts were created accordingly by the Subordinate Courts Ordinance, 1903, which constituted a system of Courts inferior to the High Court presided over by District and Assistant Magistrates.

The Subordinate Courts are divided into District and Sub-District Courts exercising civil and criminal jurisdiction over non-natives, and District Native and Sub-District Native Courts with jurisdiction over natives. An appeal lies from a Sub-District to a District Court and similarly from a Sub-District Native Court to a District Native Court and from any of these Courts, either with or without leave, to the High Court. The High Court in addition to its appellate jurisdiction exercises a power of confirmation of all sentences over a certain amount, and has further ample powers of intervention which it may exercise as required.

The Eastern Africa Protectorates (Court of Appeal) Order in Council, 1902, created an Appeal Court for this Protectorate as well as for East Africa and Uganda. This Court consisted of

three (or in certain cases two) Judges taken from the Judges of the Consular Court at Zanzibar and the High Courts of East Africa, Uganda and Nyasaland, and sat ordinarily at Zanzibar. The constitution of the Appeal Court has recently (by the Eastern Africa Protectorates (Court of Appeal) Order in Council, 1908) been altered. It is now made up from the Judges or Acting Judges of the East Africa, Uganda and Nyasaland High Courts and the Judges of the Consular Court at Zanzibar are no longer members of the Appeal Court. An appeal lies from this Court to the Privy Council.

In this way was evolved a complete system of Protectorate Courts with their respective appropriate jurisdiction clearly defined and limited by our own Orders in Council and the Ordinances made thereunder, and the system of Consular and Judicial Officers' Courts and Collectors' Courts came to an end. The titles of Judicial and Consular Officer disappeared and those of Collector and Assistant Collector in so far as they related to the exercise of Judicial functions were changed to District and Assistant Magistrate.

## (2) The Law of the Protectorate.

It is laid down by the "British Central Africa Order in Council, 1902," Section 15 (2), that the civil and criminal jurisdiction of the High Court (and consequently of the Subordinate Courts) shall, so far as circumstances admit, be exercised in conformity with the substance of the law for the time being in force in England, and with the powers vested in and according to the procedure and practice observed by and before Courts of Justice and Justices of the Peace in England according to their respective jurisdictions and authorities, except so far as may be otherwise provided by law. Section 20 of the same Order in Council provides that "In all cases civil and criminal to which natives are parties, every Court (a) shall be guided by native law so far as it is applicable and is not repugnant to justice and morality or inconsistent with any Order in Council or Ordinance or any Regulation or Rule made under any Order in Council or Ordinance; and (b) shall decide all such cases according to substantial justice without undue regard to technicalities of procedure and without undue delay."

The substance of the law for the time being in force in England means the Common Law, the principles of equity and such statutes as are deemed to be of general application in force at the time of the making of the Order in Council. In addition to this body of law we have the old Regulations and Rules thereunder made under the "Africa Order in Council, 1889," the "Africa Order in Council, 1889," itself, which is expressly kept alive by the "British Central Africa Order in Council, 1902," in so far as it does not conflict with the latter Order in Council, the Orders in Council of 1892, 1893, 1898 (2), and, lastly, we have

the local Ordinances made by virtue of Section 12 of the Order in Council of 1902, and the rules made under these Ordinances.

As laid down in Section 20 referred to above, regard is had to native law and custom where not repugnant to justice and morality. The most common instance in which English law is modified by native law is to be found in the treatment of adultery cases, which are, in accordance with the native ideas on the subject, treated criminally. In other cases where it is impossible to follow native law and custom by reason of its being repugnant to justice and morality, evidence of a well established custom is always taken into account as a mitigating circumstance which though not justifying the crime committed affords some excuse and is held to reduce the degree of criminality involved. The commonest instance of this is afforded by the "muabvi" ordeal, where poison distilled from the muabvi bark is administered to persons accused of witch-craft. Death frequently results from such administration, but, though the ordeal is attended with every circumstance of deliberation, it is held, and held correctly, that the deep-rooted genuine belief of the native in the efficacy of the practice reduces the degree of criminality from murder to manslaughter. In cases, however, where it can be proved that the ordeal was not conducted in accordance with the necessary native ceremonial, where in fact the ordeal is merely used as a cloak to cover a deliberate attempt to cause death, no such extenuating circumstances are held to exist to mitigate the offence and its punishment.

Court procedure is laid down by "The High Court Practice and Procedure Ordinance, 1906," and "The Subordinate Courts Supplementary Ordinance, 1906."

### (3) Administration of Deceased Estates.

The Registrar of the High Court is Administrator of deceased estates by virtue of "The High Court Practice and Procedure Ordinance, 1906," and all enquiries as to the effects of persons dying within the Protectorate should be addressed to him. Balances of estates administered under the High Court are remitted through the Crown Agents for the Colonies to the persons residing in England entitled thereto. (For fees charged on Probate and Administration see scale of High Court Fees.)

### (4) Attorney-General's Office.

The Attorney-General also discharges the duties of Registrar of Deeds and Registrar-General of Births, Marriages, Deaths, Banking, Patents, Trade Marks and Designs.

All documents purporting to transfer land or to lease land in the Protectorate for a longer period than one year or to create any charge upon land are null and void unless registered at the

office of the Registrar in Blantyre within six weeks of the date of execution.

Bills of Sale must be registered within three months of execution.

The law relating to Patents, Designs and Trade Marks is provided for by "The Patents Designs and Trade Marks Ordinance, No. 9 of 1903."

The Registration of Births and Deaths is provided for by "The Registration of Births and Deaths Ordinance, No. 2 of 1904" and "The Registration of Births and Deaths Amending Ordinance, No. 8 of 1905," which render compulsory the registration of the birth of any child of European or American origin or descent and of the death of any person of European, American or Asiatic race or origin. Births must be registered within three months and deaths within one month.

The law relating to marriage is provided for by "The British Central Africa Marriage Ordinance, No. 3 of 1902." Each Resident in charge of a District is Marriage Officer for his particular district.

Returns of Births and Deaths are sent quarterly to the Registrar-General. Marriage returns are sent monthly.

#### (5) Pleaders of the High Court.

The following have been admitted as Pleaders of the High Court under "The Legal Practitioner Rules, 1903," which have been replaced by "The Legal Practitioners' Rules, 1908."

Name.	Residence.
J. Scott (Solicitor, Scotland).	Blantyre.
F. W. Robinson (Solicitor, England).	do.
Ratanshaw Koyaji (Pleader, Bombay).	do.

#### (6) Prisons.

There are two Prisons for long term prisoners, that is for prisoners sentenced to terms exceeding six months. One of these is for natives, namely the Central Prison, Zomba. The Central Prison for Europeans and Asiatics is at Blantyre. Asiatics are also imprisoned occasionally at Zomba. The average number of native long sentence prisoners is about 160. The prison at Zomba is under military charge; the prison at Blantyre is under the Resident of the Blantyre District.

Each station and sub-station has a prison for short term native prisoners.

(7) Visiting Justices.

The Deputy Governor.

The Judge.

The Principal Medical Officer.

(8) High Court Fees.

See page 149.

(9) Stamp Duties.

See page 144.

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## TRADE OF PROTECTORATE.

## Principal Articles Imported.

VALUE OF PRINCIPAL ARTICLES

PRINCIPAL ARTICLES.	1893	1895	1896	1897	1898	1899
	Year ended 31st December	15 months ended 31st March	Years ended 31st March.			
	£	£	£	£	£	£
Alcohol . . . . .	1,938	3,650	3,270	3,163	5,290	3,891
Arms and Ammunition . . . .	1,098	1,926	3,109	2,318	3,343	1,609
Hardware (including enamel-ware, beads, bicycles, metal-ware, paints, oils, &c.)	7,515	8,746	11,325	5,937	6,840	11,057
Provisions . . . . .	7,797	15,199	13,382	7,565	9,969	14,369
Soft Goods (b) . . . . .	22,785	36,051	32,511	32,488	48,207	41,950
Bullion and Specie :						
Specie . . . . .	—	—	—	—	—	—
TOTAL VALUE OF ALL ARTICLES IMPORTED (INCLUDING BULLION AND SPECIE). } £	44,563	75,720	69,300	67,656	78,637	93,743

## Principal Articles Exported.

QUANTITIES AND VALUE OF PRINCIPAL ARTICLES OF DOMESTIC AND

PRINCIPAL ARTICLES.	1893	1895	1896	1897	1898	1899
	Year ended 31st December	15 months ended 31st March	Years ended 31st March.			
Coffee . . . . . Lbs.	93,118	165,320	322,000	762,382	861,034	809,758
l	2,997	3,402	7,136	16,427	22,412	23,756
Cotton, Raw. . . . . Lbs.	—	—	—	—	—	—
l	—	—	—	—	—	—
Ivory . . . . . Lbs.	42,945	14,516	26,484	16,334	6,029	Not stated
l	18,252	5,271	9,380	4,653	2,478	2,268
Rubber. . . . . Lbs.	539	144	563	5,667	20,842	91,000
l	34	7	28	277	1,045	10,234
Tobacco . . . . . Lbs.	—	—	—	—	—	1,780
l	—	—	—	—	—	50
Bullion and Specie :						
Bullion . . . . . l	—	—	—	—	—	—
Specie . . . . . l	—	—	—	—	—	—
TOTAL VALUE OF ALL ARTICLES EXPORTED (INCLUDING BULLION AND SPECIE). } £	22,139	9,704	17,040	21,711	26,146	38,650

(a) Wine and Beer are included "under Provisions" from 1904 inclusive.

(b) These consist of piece goods, calico, coloured handkerchiefs, clothing, native cloths, and Manchester goods generally.

(c) Including Goods and Specie imported by the Shire Highlands Railway Company, to the value of 69,683*l.* in 1904-5, 32,569*l.* in 1905-6, 35,575*l.* in 1906-7 and 37,974*l.* in 1907-8. These amounts are excluded from the details.

## TRADE OF PROTECTORATE.

## Principal Articles Imported.

(INCLUDING BULLION AND SPECIE) IMPORTED.

1900.	1901.	1902. (d)	1903.	1904.	1905.	1906.	1907.	1908.	1909.
Years ended 31st March.									
£	£	£	£	£	£	£	£	£	£
4,332	1,683	1,293	2,457	(a) 2,193	2,134	2,773	2,699	2,540	2,369
1,455	1,619	2,651	4,130	4,249	2,873	2,777	2,615	1,790	2,112
22,551	12,777	22,776	21,551	23,139	23,750	29,867	16,075	13,157	16,264
22,894	23,026	19,203	29,338	(a) 26,949	22,834	30,013	23,330	21,322	19,517
82,169	66,951	54,631	68,965	102,650	68,423	106,218	139,431	80,069	75,411
—	—	9,250	10,200	1,000	8,200	5,000	9,100	—	2,205
154,305	133,791	137,842 (d)	153,990	207,685	235,749 (c)	253,181 (c)	283,191 (c)	188,659	155,098

## Principal Articles Exported.

OTHER PRODUCE (INCLUDING BULLION AND SPECIE) EXPORTED,

1900.	1901.	1902. (d)	1903.	1904.	1905.	1906.	1907.	1908.	1909.
Years ended 31st March.									
2,148,160	1,248,402	699,030	1,097,092	714,743	1,301,655	773,952	454,111	780,133	634,896 Lbs.
62,245	26,577	14,751	25,177	17,869	27,159	16,124	9,460	16,253	19,477 l.
—	—	—	632	56,897	285,185	776,640	526,119	403,486	756,120 Lbs.
—	—	—	—	1,778	5,941	16,180	15,345	13,998	28,355 l.
12,821	2,878	2,250	2,061	1,806	15,116	16,197	9,900	8,399	12,830 Lbs.
2,329	592	544	637	563	4,536	4,859	3,712	4,155	6,415 l.
118,239	86,404	14,393	11,723	4,372	72,224	29,152	18,218	16,119	20,501 Lbs.
13,189	9,332	1,626	1,190	426	9,029	3,614	3,872	3,424	4,101 l.
4,207	1,456	14,369	17,764	28,754	56,826	199,020	413,316	554,395	570,102 Lbs.
113	25	451	296	481	947	3,317	6,880	9,239	14,253 l.
—	—	—	—	—	—	—	17,311	—	—
—	—	—	—	—	2,960	—	1,109	14,233	40,853 l.
78,514	37,332	21,739 (d)	34,765	27,409	68,850	87,384	90,505	91,745	142,819

NOTE.—Transit Trade is excluded in years prior to 1904-5.

(d) For 1901-2 and later years the above figures represent the *total* trade of the Protectorate. In prior years the figures are for the Port of Chiromo (via Shire River) only.

## POSTAL SERVICE.

There are 24 Post Offices in the Protectorate, including the Postal Agency in the British Concession at Chinde. Mails from the United Kingdom and abroad are sorted at Chinde and forwarded to Port Herald by the first river steamer available. From Port Herald to Blantyre, a distance of 112 miles, the mails are conveyed by rail. Postal communication to other places in the Protectorate is by carriers (931 miles), and on Lake Nyasa by the British and German Government steamers.

The rates of postage in the Protectorate are:—

### Internal.

Letters, 1d. per oz. Postcards,  $\frac{1}{2}$ d. per single postcard. Book packets,  $\frac{1}{2}$ d. per 2 oz. Patterns and Samples, 1d. per 4 oz. with a minimum charge of 2d. Newspapers, for every newspaper not exceeding 2 oz.  $\frac{1}{2}$ d.

### External.

From any part of the Nyasaland Protectorate, including the British Concession, Chinde :  To	Letters per 1 oz.	Postcards impressed with a stamp of the value of :	Book Packets per 2 oz.	Samples, per 4 oz.	Newspapers, per paper not exceeding 2 oz.
The United Kingdom, Egypt, Province of Mozambique, also North Eastern, North Western, Southern Rhodesia and the undermentioned British Possessions and Protectorates, viz: Aden, Ascension, Australia, Bahamas, Barbados, Bermuda, British East Africa Protectorate, British Guiana, British Honduras, British North Borneo, Cape Colony, Canada, Cayman Islands, Ceylon, China, British Postal Agencies in (viz. Amoy, Canton, Chefoo, Foochow, Hankow, Hoihow, Liukung Tau, Ningpo, Shanghai, Swatow), Cyprus, Falkland Islands, Fiji, Gambia, Gibraltar, Gold Coast, Hong Kong, India, Jamaica, Johore, Labuan, Lagos, Leeward Islands, (viz., Antigua, St. Kitts, Nevis, Dominica, Montserrat and the Virgin Islands), Malay States (Protected), (viz., Perak, Selangor, Negri-Sembilan and Pahang), Malta, Mauritius, Morocco (British Agencies only, viz. at Alcazar, Casablanca, Fez, Larache Mazagan, Mequinez, Mogador, Rabat, Saffi, Tangier and Tetuan), Natal, Newfoundland, New Zealand (including Cook or Hervey Islands), Nigeria (Northern), Nigeria (Southern), Orange River Colony, St. Helena, Sarawak, Seychelles, Sierra Leone, Somaliland, Straits Settlements, Tobago, Transvaal, Trinidad, Turk's Islands, Uganda, Windward Islands, viz., (Grenada, St. Lucia, St. Vincent and the Grenadines), Zanzibar, and Zululand.	1d.	1d.	1d.*	1d.†	1d.

From any part of the Nyasaland Protectorate, including the British Concession, Chinde :		Letters per 1 oz.	Postcards impressed with a stamp of the value of :	Book Packets per 2 oz.	Samples, per 4 oz.	Newspapers, per paper not exceeding 2 oz.
To.						
Other Countries (including German East Africa and German Nyasaland)		3d. first oz. and 2d. for each additional oz.	2d.	2d. §	1d. †	2d.

\* In cases where the packet consists either wholly or in part of "Commercial Papers" the minimum charge is 2d. for which sum, however, a weight of 4 ounces may be sent.

§ In cases where the packet consists either wholly or in part of "Commercial Papers" the minimum charge is 2d. for which sum, however, a weight of 2 ounces may be sent.

† Minimum charge 2d. and maximum weight 12 ounces.

Prepayment of postage is optional in respect of correspondence for places in the Protectorate, N.E. Rhodesia, the United Kingdom and the British Colonies and Dependencies to which Imperial Penny Postage extends, but articles posted unpaid or insufficiently prepaid will be charged on delivery with double the deficiency. Articles for all other countries must have the correct postage affixed by the senders, and where this is not done are liable to be returned through the Returned Letter Office. Letters, &c., can be registered on prepayment of a fee of 4d. Coin cannot be transmitted through the Post.

### Parcel Post.

<i>Inland.</i> —Not exceeding 1 lb.	...	...	...	4d.
"    "    2 lbs.	...	...	...	8d.
Every subsequent Pound	...	...	...	3d.
<i>External.</i> —To North Eastern Rhodesia, per lb. up to 11 lbs.	1/-.			
" Southern Rhodesia	"	"	11 lbs.	1/4.
" Natal, Orange River Colony and Transvaal,	per lb. up to 11 lbs.	1/3.		
" United Kingdom.	Not exceeding	3 lbs.	2/-.	
"    "    "	"	"	7 lbs.	3/-.
"    "    "	"	"	11 lbs.	4/-.
" Cape Colony	per lb. up to 11 lbs.	1/-.		
" Aden, Burmah, Ceylon and India, not exceeding	1 lb. 1/10, and for each subsequent pound up to 11 lbs.	1/-.		
" Zanzibar.	Not exceeding	3 lbs.	1/6.	
"    "    "	"	"	7 lbs.	2/6.
"    "    "	"	"	11 lbs.	3/6.
" British East Africa and Uganda (via Zanzibar).	Not exceeding	3 lbs.	2/1.	
"    "    "	"	"	7 lbs.	3/9.
"    "    "	"	"	11 lbs.	5/5.
" All other countries,	2/6 per lb.			

Parcels for the countries mentioned below may be insured against loss (but not against damage) up to a limit of £20. At present such parcels are only accepted at Zomba, Blantyre, Chiromo, Fort Johnston and Port Herald Post Offices. The fees for insurance are:—

To secure compensation up to £12 a fee of 1/-.  
 „ „ „ £20 „ 1/4.

#### COUNTRIES TO WHICH THE SYSTEM OF INSURANCE EXTENDS.

##### *Foreign Countries.*

Algeria	Dutch Guiana	Italy	Roumania
Austria-Hungary	Denmark	Japan	Russia
Azores	Ecuador	Liberia	Senegal
Belgium	Erithrea	Luxemburg	Servia
Bosnia-Herzegovina	Finland	Madagascar	Sweden
Cameroons	France (including	Madeira	Switzerland
Cape Verd Islands	Corsica)	Montenegro	Turkey
Cuba	French Guiana	Norway	Togoland
Crete	French Guinea	Portugal	(German)
Chili	French Indo-China	Portuguese East	Tripoli (Africa)
China	French Somaliland	Africa	Tunis and Uni-
Comoro Islands	French West Indies	Portuguese West	ted States of
Danish West Indies	Germany	Africa	America
Dutch West Indies	Holland		
Dutch East Indies	Iceland		

##### *British Possessions.*

Aden	Cyprus	Mauritius	Seychelles
Antigua	Dominica	Malay States	Sierra Leone
Australia (Common-	Egypt	New Guinea	Somaliland
wealth of)	Falkland Islands	Newfoundland	(British)
Bahamas	Gambia	New Zealand	Straits Settle-
Barbados	Gibraltar	Nigeria (Southern	ments
Bermuda	Gold Coast Colony	only)	Tobago
British East Africa	Grenada	St. Kitts	Tortola
and Uganda	Hong Kong	St. Lucia	Trinidad
British Guiana	India	St. Vincent (W.	Uganda and
British North	Jamaica	Indies)	Zanzibar
Borneo	Leeward Islands	St. Helena	
Ceylon	Malta	Sarawak	

#### Parcels for Nyasaland.

Parcels arriving from countries abroad for delivery within the Protectorate are subject to Customs charges at the rate of ten per cent. of the declared value, and to a Postal charge of 6d. for clearance and stamp duty. In case of wrong description or under-valuing of the contents the parcel will be dealt with according to the Customs Regulations.

#### British Postal Orders.

British Postal Orders are issued at the following Post Offices:—

Zomba	Fort Anderson	Mzimba
Blantyre	Fort Johnston	Ncheu
Chinteché	Karonga	Neno
Chiromo	Kota-Kota	Ngara
Dedza	Lilongwe	Port Herald
Dowa	Liwonde	



AMOUNT AND POUNDAGE.

The following are the amounts for which Postal Orders are issued, together with the Poundage payable in Nyasaland in respect of each Order :—

Amount of Order.	Poundage charged.	Amount of Order.	Poundage charged.	Amount of Order.	Poundage charged.
s. d.		s. d.		s. d.	
0 6	1d.	7 6	2d.	14 6	3d.
1 0		8 0		15 0	
1 6		8 6		15 6	
2 0		9 0		16 0	
2 6		9 6		16 6	
3 0	2d.	10 0	3d.	17 0	
3 6		10 6		17 6	
4 0		11 0		18 0	
4 6		11 6		18 6	
5 0		12 0		19 0	
5 6		12 6		19 6	
6 0		13 0		20 0	
6 6		13 6		21 0	
7 0		14 0			

The sender of a Postal Order, whether made payable in the Nyasaland Protectorate or elsewhere, may increase its value by an amount not exceeding 5d. by affixing Nyasaland postage stamps, not exceeding three in number, to the face of the Order. No credit will be given for stamps which are in excess of three or which are affixed elsewhere than in the spaces provided. Odd halfpence will not be paid. Stamps perforated with initials or marks, or embossed or impressed stamps cut out of envelopes, post cards, etc., cannot be accepted for this purpose.

PLACES OF ISSUE AND PAYMENT.

Postal Orders are issued and paid at all Post Offices in the Nyasaland Protectorate, and are also issued and paid in the under-mentioned British Possessions and other places abroad :—

Aden	Chatham Islands	Jamaica*
Andaman Islands	Constantinople	Labuan
Ascension	(Brit. P.O.)*	Leeward Islands*
Bahamas*	Cook Islands	Anguilla
Baluchistan	Cyprus	Antigua*
Barbados*	Egypt (including the	Dominica*
Basutoland	Soudan)	Montserrat*
Bechuanaland Protec-	Falkland Islands*	Nevis*
torate*	Fanning Island	St. Kitts*
Bermuda*	Federated Malay States	Virgin Islands*
Beyrout (British P.O.)*	Fiji*	Malta*
British Bechuanaland	Gambia*	Mauritius
British East Africa*	Gibraltar*	Morocco (British
British Guiana*	Gold Coast*	Agencies at Tangier,
British Honduras*	Grenada*	Fez, &c.)*
Burma	Hong Kong and its	Natal*
Bushire	Agencies in China	Nigeria (S & N)*
Cape Colony*	India and Indian Post	Newfoundland*
Cayman Islands*	Offices on the Persian	New Zealand*
Ceylon*	Gulf and in Tibet*	No. Western Rhodesia*

No. Eastern Rhodesia*	Salonica (British P.O.)*	S., N.E. and N.W.
No. Borneo (British)*	Sarawak	Rhodesia*
Orange River Colony*	Savage Island	Straits Settlements
Panama (British P. O.)*	Seychelles*	Swaziland
Penrhyn Island	Sierra Leone*	Tobago*
Southern Rhodesia*	Smyna (British P.O.)*	Transvaal*
St. Helena	SomalilandProtec-	Trinidad*
St. Lucia*	torate*	Turks & Caicos Islands*
St. Vincent*	Southern Nigeria*	Uganda*
		Zanzibar*

\* Postage Stamps of these Colonies will be paid up to the value of 5d. excluding an odd halfpenny when affixed to British Postal Orders.

### Money Orders.

Money Orders are issued at Blantyre, Chiromo, Fort Johnston, Port Herald and Zomba for payment in most foreign countries.

#### MONEY ORDER RATES OF COMMISSION.

To United Kingdom and all other Countries excepting the undermentioned :

<i>Value</i>	£2.	£5.	£7.	£10.	£12.	£15.	£17.	£20.
<i>Commission</i>	9d.	1/6	2/3	3/-	3/9	4/6	5/3	6/-

† To German South-West Africa, New South Wales, New Zealand, Queensland, St. Helena, South Australia, Tasmania, Victoria, and Western Australia ; also India and Countries which are negotiated through India—

<i>Value</i>	£2.	£5.	£7.	£10.	£12.	£15.	£17.	£20.
<i>Commission</i>	10d.	2/-	2/10	4/-	4/10	6/-	6/10	8/-

† In the case of these Countries, the negotiation of the Money Orders requires a longer time than that ordinarily occupied in the transmission of letters, and correspondents should be advised accordingly.

## TELEGRAPH SERVICE.

The telegraph service at present in the Protectorate is conducted by the African Trans-Continental Telegraph Company, whose line runs from Umtali, in Southern Rhodesia, to Tete in Portuguese East Africa, where the Zambesi River is crossed; from Tete to Chikwawa, crossing the Shire River, thence to Blantyre and Zomba and on to Karonga at the north end of Lake Nyasa. From Karonga the line traverses the Tanganyika Plateau, passing through the northern districts of North-Eastern Rhodesia to Lake Tanganyika and northwards into German East Africa. There are also branch lines running from Domira Bay to Fort Jameson, and Chikwawa to Chiromo West.

The Shire Highlands Railway Company own a telegraph line along the line of railway between Port Herald and Blantyre.

A Portuguese line connects Quelimane with Chiromo and Chinde, meeting the African Trans-Continental Telegraph system at the former place.

The following tables give the tariffs and distances between offices :—

### Tariff.

To and from any Station within the Nyasaland Protectorate or North-Eastern Rhodesia (A. T. T. Company's system).—Ordinary telegrams 3d. per word. Minimum charge 10 words 2/6. Cypher messages  $4\frac{1}{2}$ d. per word. Minimum charge 10 words 3/9.

To and from Port Herald or any Station on the Shire Highlands Railway.—Ordinary telegrams 4d. per word. Minimum charge 3/4. Cypher messages  $5\frac{1}{2}$ d. per word. Minimum charge 4/7.

Southern Rhodesia, the Transvaal, Orange River Colony, Natal, the Cape Colony, Lourenço Marques, and Offices on the Beira Railway.—Ordinary telegrams 5s. for 12 words and 5d. for each additional word. Press telegrams 5s. for 48 words and 5d. for each additional 4 words or portion thereof. Cypher messages 7/6 for 12 words and  $7\frac{1}{2}$ d. for each additional word.

Portuguese East Africa.—Ordinary telegrams 5d. per word. Minimum charge 10 words 4/2. Cypher messages  $6\frac{1}{2}$ d. per word. Minimum charge 10 words 5/5.

German East Africa (A. T. T. Company's system).—Ordinary telegrams 5d. per word. Minimum charge 10 words 4/2. Cypher messages  $6\frac{1}{2}$ d. per word. Minimum charge 5/5.

Cablegrams to the Continent of Europe 2/11 per word. Minimum charge 3 words 8/9. The rates for cablegrams to all parts of the world may be obtained on application to any Telegraph Office. Telegrams are accepted for delivery in the United Kingdom to be forwarded by post from Cape Town on payment of the ordinary rates to the Cape Colony, with an additional 1d. for postage, such telegrams should be handed in not later than noon on Tuesday, to ensure their being forwarded by the

weekly mail steamer which leaves Cape Town every Wednesday afternoon. The words "Post Cape Town" must be inserted at the end of the address.

### Table of Distances between Sections.

MAIN LINE.			M.	P.	MILES.	POLES.
<i>Umtali to Blantyre Section:—</i>					367	10
Umtali to Inyanga	...	...	50	0		
Inyanga to Tete	...	...	199	0		
Tete to Chikwawa	...	...	92	0		
Chikwawa to Blantyre	...	...	26	10		
<i>Blantyre to Karonga Section:—</i>					502	19
Blantyre to Zomba	...	...	47	10		
Zomba to Fort Johnston	...	...	77	10		
Fort Johnston to Domira Bay	...	...	95	5		
Domira Bay to Kota Kota	...	...	50	0		
Kota Kota to Nkata	...	...	102	0		
Nkata to Florence Bay	...	...	70	17		
Florence Bay to Karonga	...	...	59	17		
<i>Karonga to Ujiji Section:—</i>					529	10
Karonga to Fife	...	...	93	10		
Fife to Abercorn	...	...	105	5		
Abercorn to Bismarckburg	...	...	37	0		
Bismarckburg to Ujiji	...	...	293	10		
					1,399	19

### BRANCH LINES.

Chikwawa to Chiromo West	..	67	0		
Domira Bay to Fort Jameson	...	128	5	195	5
20 Poles to the mile.					

List of the African Transcontinental Telegraph Company's Offices,  
showing Mileage, Hours of Attendance, etc.

Code.	Office.	Mileage.	Transmitting Office.	Hours of Attendance.										Remarks.		
				Week-days.						Sundays.		Holidays.			In Circuit.	
				From	To	From	To	From	To	From	To					
A	B	Abercorn*	1069½	Blantyre	8	12	2	4.30	9	10	9	10	Hourly	German East Africa Office.		
B	Y	Blantyre†	367½	Salisbury	8	12.30	2	4.40	9	10.30	9	10.30	5		6	Always
B	I	Bismarckburg*	1106½	{ Abercorn Blantyre	8	12	2	4	9	10	9	10	Hourly		Hourly	
C	A	Chikwawa*	341	Blantyre	8	12	2	4	9	10	9	10	½ Hourly		½ Hourly	
C	O	Chiromo West**	67	"	8	12	2	4	9	10	9	10	Hourly		Hourly	
D	B	Domira Bay*	587¾	"	8	12	2	4.30	9	10	9	10	Hourly		Hourly	
D	A	Dova*†	40	Fort Jameson	8	12	2	4	9	10	9	10	Hourly		Hourly	
F	I	Fife*	964½	Blantyre	8	12	2	4	9	10	9	10	Hourly		Hourly	
L	M	Livingstonia Mission	810½	Karonga	8	12	2	4	9	10	9	10	Hourly		Hourly	
J	A	Fort Jameson*†	128½	Blantyre	8	12	2	4.30	9	10	9	10	Always		Always	
F	J	Fort Johnston*	429½	"	8	12	2	4	9	10	9	10	Hourly	Hourly		
K	G	Karonga*	870½	"	8	12	2	4	9	10	9	10	Hourly	Hourly		
K	K	Kota-Kota*	637¾	"	8	12	2	4	9	10	9	10	2 Hourly	2 Hourly		
N	K	Nkata*	749¾	"	8	12	2	4	9	10	9	10	2 Hourly	2 Hourly		
U	J	Ujiji*	1400	{ Abercorn Blantyre	8	12	2	4	9	10	9	10	Hourly	Hourly		
Z	A	Zomba*	415	Blantyre	8	11.30	2	4	9	10	9	10	Always	Always		

\* No afternoon attendance on Saturdays.

† Open 5-6 p.m. on Saturdays.

‡ Branch Line.

§ Messages in plain English only.



# MEDICAL.

## Climate.

There may be said to be two climates in the Protectorate: one of the Shire Valley and Lake Nyasa, the other of the rest of the country which lies at a much higher elevation.

The former has a temperature which is moderate during the six cooler months of the year but before the rains it sometimes reaches as high as  $120^{\circ}$  in the shade, and a rainfall not exceeding as a rule 35 inches; the latter has a fairly pleasant climate, the thermometer ranging from a maximum of about  $96^{\circ}$  or  $97^{\circ}$  in the hottest months to a minimum of about  $40^{\circ}$  during the coldest portion of the dry season, the annual rainfall in the Shire Highlands varying from about 40 to 100 inches.

The seasons may conveniently be divided into the Rainy and the Dry; the former commences at the end of November and finishes at the end of March, the heaviest rainfall being in the months of January and February; the latter embraces the remaining and cool portions of the year, the weather is fairly warm at the setting in and close of the rainy season.

There are some parts of the Protectorate, however, for example the Nyika Plateau, where the thermometer descends far lower than  $40^{\circ}$  during the cold weather and where frost is frequently experienced at night.

## Health.

The climate of the Protectorate cannot be said to be altogether a healthy one for Europeans. A certain amount of malarial fever must be expected. The severest form is commonly known as "Blackwater" fever, the others not being as a rule dangerous to life. Blackwater fever is generally recognised to be of malarial origin, though this point has from time to time been disputed. It almost invariably occurs in those who have previously suffered from repeated attacks of malarial fever; and quinine, not necessarily in large or oft-repeated doses, is held by many to be the chief provoking cause. There are several residents in the country who have had two or more attacks of Blackwater fever; there would therefore appear to be some constitutional tendency to this type of fever. The mortality from this disease has, however, greatly diminished within recent years, owing to the adoption of a different line of treatment and the withholding of quinine which it was the custom formerly to give in large doses during an attack. In 1895-6 there were no less than sixteen deaths from this disease alone; in 1908-9 there were five, and the death-rate amongst Europeans throughout the Protectorate from all causes for the same year was 28.57 per thousand in place of about 70 per thousand a few years ago.

But for the various forms of malarial fever, Nyasaland may be said to be a healthy country.

European children seem to thrive fairly well, but experience clearly shows that they require to be removed to a temperate climate after they have reached the age of three or four years. European women appear on the whole to enjoy better health than the men, probably owing in a large measure to their leading a less exposed life.

**HEALTH PRECAUTIONS.** In the cool months of the year flannel should be worn next the skin; if other clothes are worn during the day a change to flannel should be made at sunset, as there is a considerable drop in temperature during the night. In warm weather cotton, or a mixture of cotton and silk, will be found the most suitable, particularly for those who are subject to prickly heat.

The head should be most effectively protected; for this purpose pith, cork, or light felt helmets, oval in shape and well ventilated, are the best.

Mosquito nets require to be used throughout the year as a protection against fever, even if mosquitoes do not appear to be in evidence.

Moderation both in eating and drinking should be observed; spirits should not be taken during the heat of the day.

Drinking water should be filtered, or preferably both boiled and filtered, the most reliable filters being the Pasteur-Chamberland and Berkefeld.

When travelling, a very important point is the selection of a suitable site for pitching camp, and this matter should not be left to the judgment of servants. The tent should be pitched at least 800 yards away from a village and from water, in order to secure immunity from the bites of infected mosquitoes and therefore from malaria. The use of a mosquito net is imperative, both as a safeguard against fever and the bites of other noxious insects. Fresh food should always be used in preference to preserved fish and meat.

### Medical Staff.

The medical staff of the Protectorate consists of ten Doctors and five Nurses.

Medical Officers are stationed at the following centres:—Chiromo, Blantyre, Zomba and Fort Johnston, and at other places when available.

### Government Hospitals and Dispensaries.

There are three European Hospitals: at Blantyre, Zomba and Fort Johnston respectively. Each of these is provided with a Medical Officer and Nurse.

**HOSPITAL FEES.** Officials are charged for maintenance only, at the rate of 5/- per diem. The inclusive fee for non-official patients is 10/- per diem.

At the Military Camp, Zomba, there are two Hospitals: one for Indians and one for Native Troops.

The Central Prison at Zomba has a large cell set aside as a Hospital for sick prisoners.

Dispensaries affording out-door relief are open to natives at Chiromo, Blantyre, Zomba and Fort Johnston; and occasionally at other stations. Some of these dispensaries (Chiromo, Blantyre, Fort Johnston) have attached to them a small ward in which natives suffering from acute diseases are admitted.

### Lunatic Asylum.

There is a lunatic asylum for natives at Zomba, affording accommodation for six inmates.

### Ailments.

The following notes on ailments incidental to residence in this country may be useful:—

#### FEVERS.

(1). **MALARIAL.** These may be roughly divided into two types: (a) the regularly **INTERMITTENT**—a form of infection in which there is a period of intermission of fairly definite duration between successive attacks, the paroxysm itself being divisible into three stages: the cold, the hot, and the sweating; (b) the more **IRREGULAR** fevers, including all the so-called remittent and pernicious forms, of which Blackwater fever is an example. **TREATMENT:** It is generally advisable to commence treatment with an aperient: 5 grains of calomel or a teaspoonful of Epsom salts. In an attack of ordinary **INTERMITTENT** fever: extra blankets and hot water bottles to the feet during the cold stage. Cover lightly during the hot stage, and take 10 grains of phenacetin to relieve headache and induce sweating. As soon as this, the third stage, is reached, take 10 grains of quinine and thereafter 5 grains three times a day for a week. In the treatment of the **IRREGULAR** forms, 10 grains of quinine should be taken immediately irrespective of whether the skin is dry or moist, followed by 5 grain doses at intervals of every six hours. Ten grains of “phenacetin with caffeine” tabloids may be taken to relieve headache and dryness of the skin. If the temperature is continuously high, sponging is necessary; should it rise above 106° the cold bath is indicated, in which the patient should be kept until the temperature has fallen to about 102°. The **DIET** to consist of fluid nourishment.

**BLACKWATER FEVER** is characterised by extreme prostration, vomiting, the passage of port wine coloured urine, and a yellow discolouration of the skin and whites of the eyes. As soon as these symptoms are observed, the nearest medical man should

immediately be sent for. If any quinine has already been taken it should at once be discontinued. Absolute rest in bed is necessary, bladder and bowels are to be relieved in the recumbent posture, and patient is on no account to sit up. For vomiting, mustard plaster over pit of stomach, or what is more effectual a hypodermic injection of half a grain of morphia. DIET to consist of barley-water, or milk and barley-water in equal proportion to which a pinch of bicarbonate of soda may be added; carefully prepared chicken broth free of grease; Benger's food; Brand's essence; Valentine's meat juice properly diluted. A tablespoonful of brandy or good whisky, well diluted, may be taken if there is giddiness or fainting.

PROPHYLAXIS against malaria consists in avoiding being bitten by mosquitoes; the use of mosquito nets all the year round; when camping, avoiding pitching camp in the neighbourhood of villages; and in taking 5 grains of quinine daily, or as an alternative 15 grains on two successive days once a week, the former plan being probably the safer.

(2). SUN FEVER. Exposure to the direct rays of the sun or to moist damp heat is sometimes followed by headache and a rise of temperature, with or without vomiting. This condition must not be confounded with malaria, and the treatment consists in lying up in a cool and airy room, applying cold compresses to the head, and taking an aperient if necessary. PROPHYLAXIS embraces avoidance of exposure to the sun, violent or prolonged exercise in the heat of the day, and abstention from alcoholic drinks except at sundown. Particular attention should also be bestowed on suitable headgear and clothing.

### THROAT AFFECTIONS.

(1). SORE THROAT. In acute attacks antipyrine is said to be very effectual in speedily relieving the constitutional symptoms such as headache, backache, and rise of temperature. A dose of 10 grains may be taken at the outset of an attack, and thereafter 5 grains every six hours until three or four doses have been taken. Quinine similarly employed is also efficacious in relieving or cutting short the early symptoms. Locally, a gargle of chlorate of potash, of the strength of 5 grains to each tablespoonful of water, is a handy remedy.

(2). TONSILITIS. The treatment is similar to above. Hot poultices of linseed meal should be applied externally, and the inhalation of steam from a basin of boiling water with a sheet thrown over the head so as to make a tent gives relief.

### CHEST AFFECTIONS.

(1). BRONCHITIS. A hot bath should be taken at bed-time and a mustard plaster applied over the front of the chest for about twenty minutes. If a cough mixture is not available tabloids of ipecacuanha and squills may be taken every four



hours, or of paregoric if the cough is very troublesome and there is a feeling of rawness in the chest. In all severe cases the patient must be confined to his room. If there is difficulty in breathing accompanied with much fever, a medical man should be consulted without delay.

(2). PLEURISY. This condition is characterised by a chill or rigor, with a severe pain in the side aggravated by breathing. The pain is usually situated at the side of the chest over the lower ribs, and there is in all severe cases a perceptible rise of temperature. The treatment consists in applying a linseed meal poultice over the seat of pain or blistering, which may be done by repeated applications (three or four) of tincture of iodine. If the pain is severe, 1 grain tabloid of opium may be taken.

### BOWEL COMPLAINTS.

(1). CONSTIPATION is the most frequent. Cascara is perhaps the best remedy for general use, but special attention must be paid to diet. Wholemeal bread, oatmeal, vegetables and fruit all exercise a laxative effect.

(2). DIARRHŒA. This may be due to various causes, and it is generally advisable to commence treatment with a dose of castor oil in order to remove any irritating materials in the bowels which may have caused it. After the oil has acted, 5 grains of Dover's powder or 15 drops of chlorodyne may be taken every 4 hours. In obstinate cases lead and opium pills may be useful. DIET should consist of carefully prepared farinaceous food and chicken broth.

(3). DYSENTERY. In addition to the frequency of the motions there is much griping and the stools contain mucus and blood. TREATMENT: A teaspoonful of Epsom salts should be taken every hour until a purgative effect is produced. This should be repeated daily until the stools are free of both mucus and blood. Sulphate of soda may be taken in the same way instead of the magnesium salt. Rest in bed is essential, and diet same as for Diarrhœa.

PROPHYLAXIS consists in always boiling the drinking water, and protecting food from being contaminated by flies.

NOTE: In all cases of protracted diarrhœa and in most cases of dysentery the nearest medical man should be consulted.

### SKIN DISEASES.

(1). PRICKLY HEAT. An eruption of minute pink spots around the orifices of the sweat glands, due to excessive sweating and attended by a tingling, pricking or itchy sensation. TREATMENT: Dust with Fuller's earth or equal parts of boracic acid, oxide of zinc and starch, or the two latter alone in equal proportion. If very troublesome the use of soap in the daily bath should be discontinued for a time, and a small quantity of oatmeal tied in a piece of muslin dissolved in the bath. Light clothing should be worn, and anything causing undue sweating avoided.



(2.) **BOILS.** Due to the entry of micro-organisms into the skin and the tissues beneath it through a breach of surface. **TREATMENT:** Boils should not be meddled with but left to open of themselves; they rarely require to be incised. They should be thoroughly cleansed with an antiseptic lotion and dressed daily with boracic acid.

(3.) **RINGWORM.** This affection, as its name suggests, has a tendency to spread with circular margins whilst healing in the centre, is attended with a great deal of itching, and is due to a vegetable parasite of the nature of a fungus growing in the superficial layers of the skin. **TREATMENT:** If the milder remedy, chrysophanic acid, fails, the best plan is to paint the affected part with tincture of iodine. Should a large surface be implicated the painting may be done over small areas at a time so as to avoid the discomfort and pain which might otherwise result.

(4.) **SCABIES OR ITCH.** Due to the burrowing under the skin of an animal parasite which produces small vesicles, the eruption being attended with a great deal of itching. In natives the chief seat of the rash is on the wrists and between the fingers; in Europeans it may occur in other localities. **TREATMENT:** Scrub the part thoroughly with soap and water, and apply sulphur ointment.

(5.) **CHIGGER.** An insect somewhat like the ordinary flea in appearance which burrows under the skin, most commonly of the feet and usually under the nails, becomes distended with eggs, and produces a swelling about the size of a pea, attended with much irritation. **TREATMENT** consists in carefully extracting the insect with the point of a needle and applying antiseptic dressings to the raw surface exposed.

(6.) **MYIASIS.** Due to the larvæ of a fly burrowing into the skin and producing small inflamed swellings, sometimes mistaken for boils. **TREATMENT:** The larvæ, which resemble maggots in appearance, may be squeezed out; if this fails a small incision should be made over the swellings. The parts are then to be dusted with boracic acid and kept scrupulously clean.

#### SNAKE BITE.

Apply immediately above the part bitten a tight ligature, incise over the point of entry of the fangs (resembling a couple of pin pricks) with a sharp knife. Squeeze out some of the blood, and at once rub crystals of permanganate of potash freely into the wound. Administer stimulants in case of collapse.

#### Sleeping Sickness.

At the beginning of last century Winterbottom recorded the occurrence, amongst the negroes on the West Coast of Africa, of a curious disease characterised particularly by a tendency to sleep. Since that time the disease has been described by a large number of observers, and has found a place in literature under the name of Sleeping Sickness.

The earlier hypotheses as to the etiology of this disease have been many and various, bad food, pathogenic bacteria, filaria, have all been incriminated. In 1901 the first case of human trypanosomiasis (*T. gambiense*) was recorded from the Gambia, but it was not until 1903 that the relationship between this disease and Sleeping Sickness was suspected, when Castellani discovered the trypanosome, since identified with *T. gambiense*, in the spinal fluid of negroes in Uganda suffering from Sleeping Sickness. Subsequent investigations have shown that Sleeping Sickness is the ultimate stage of the disease produced by *T. gambiense*, the early stage of the infection being characterised solely by irregular rises of temperature and enlargement of glands.

Sleeping Sickness is only endemic in certain parts of Equatorial Africa. Before Europeans entered the Congo basin in 1884 the disease seems to have been confined to certain endemic foci along the coast of West Africa and on the larger rivers, and especially to the region of the Lower Congo and the banks of the main river as high up as Bumba; but since 1892, when the war commenced in the Congo Free State which resulted in the complete overthrow of the Arab power at Nyangwi, the extension of the disease has assumed wide and alarming proportions. The large military movements consequent on this war involved a journeying of natives, as porters and soldiers, previously unknown in the Congo basin; in this way large numbers of persons from the infected districts of the Lower Congo, where an epidemic raged in the eighties, entered into and widely traversed hitherto uninfected regions. With the advent of the white man new steamer and trading routes were opened up in many directions, with the result that the infected areas have increased rapidly in number and extent.

In 1896 the disease broke out in the Busoga province of Uganda, due to the fact that a large number of Emin Pasha's Sudanese, with their wives and followers, were brought into and settled in this province, from endemic areas in the Congo Free State. The disease rapidly spread, and in a few years became endemic around the northern shores of the Victoria Nyanza and on the islands in the Lake, and so merciless has been its onslaught that it has claimed probably more than half a million victims in Uganda alone.

The extension of the disease which at present threatens our northern borders commenced at Kasongo about 1900, by a direct extension from Pania Mutumbo where the first case occurred in 1896, was carried along the much travelled routes leading to Tanganyika, and south down the Lualaba river and the western shores of Lake Tanganyika, assuming endemic proportions in the British territories around Lake Mweru and the south and south-western shores of Tanganyika at the end of 1907, when 10 cases were found on the former and 12 on the latter lake. Two other imported cases were also found about the same time on the

Mansa River, a tributary of the Luapula, apparently introduced from the Katanga country.

At the end of September, 1908, there were some 55 known cases in the British territory of North-Eastern Rhodesia; of these 13 cases were on Lake Mweru, 29 on Tanganyika, and the others scattered along the Congolese borders and the Luapula valley. All the cases were in the early stage of the disease when found, and apparently enjoying good health. Lake Tanganyika is now heavily infected in other parts outside British Territory. Kala, a French Mission 30 miles north of Bismarckburg, is decimated; and at Pala, another Mission station on the Belgian side of the Lake where the disease has been raging for 3 years, the population is now annihilated. The disease is also known to be present at Usumbara and Bismarckburg on the German side, and at Moliro, Vua, Baudouinville, Pala and Urira on the Belgian side of the Lake.

On October 12th, 1908, the first imported case was found in the Nyasaland Protectorate, near Nkata on the western shore of Lake Nyasa; two further imported cases were found in 1909, one at Kota Kota (since dead) and another in Blantyre—a Portuguese native near Ncheu, who was travelling south in search of work.

It may not be out of place here to give a brief description of the outstanding features of the disease. As mentioned above, the name "Sleeping Sickness" is somewhat misleading, for this somnolent condition is observed only at a comparatively late period, and it is the earlier symptoms of the infection, the "Trypanosome fever" so called, which one should be prepared to recognise. These are:—

(1). Swelling of the neck glands:—The swelling may be slight, but the symptom is a fairly constant one. This is often the only apparent symptom present in natives in the first stage.

(2). Fever:—This is the chief sign of the early stage in Europeans. It is of an irregularly intermittent type, the temperature being raised for 2 to 4 days, then falling to normal or below normal for 4 or 5 days. In other cases the fever is of the hectic type, the temperature being normal in the morning and 102° or 103° F. or more in the evening. The rises of temperature are not preceded by rigors, and sweating is only slightly marked.

(3). Rash:—Either small red patches (erythematous) or pimply (papular).

(4). There may be irregular patches of congestion in different parts of the body, and a puffiness of the face and œdema of the eyelids and angles.

(5). Respirations and pulse rates are increased quite apart from the febrile attacks, the respiration rate is from 25 to 30, and the pulse rate rarely falls below 90, often reaching 140 per minute.

(6). Headache is present in many cases, and there is a feeling of lassitude not only during but in the intervals of the feverish attacks.

An absolute diagnosis, however, at this stage can only be made by a microscopic examination of gland fluid or of the blood, and the finding of trypanosomes.

In the second stage, Sleeping Sickness proper, so called, the chief symptoms are fever of the hectic type and symptoms associated with the nervous system. A subtle change in intelligence or demeanour or expression marks the beginning of this stage, which gradually deepens. In a month or two the face becomes puffy, the gait shuffling and uncertain, and the speech slow, thick and mumbling. There is a marked tremor of the tongue and hands, and often of the lips and legs. The temperature gradually falls, listlessness and apathy become marked, and in a few weeks the patient passes into a condition of subnormal temperature and profound lethargy and dies after a longer or shorter interval—often conscious almost to the end but absolutely lethargic and indifferent to his surroundings.

Trypanosomes are nearly always present in the cerebrospinal fluid during this stage.

The first stage of the disease may last for several years, the second lasts from 4 to 8 months. Sometimes there are periods of remission, but relapses invariably occur. It is quite exceptional for the disease to be prolonged for more than a year from the time that the nervous symptoms become manifest.

Sleeping Sickness is conveyed principally, although perhaps not exclusively, by a species of tsetse fly known as *Gl. palpalis*. The correspondence of the topical as well as the regional distribution of the fly and the disease practically proves this and is confirmed by analogy with the life histories of other parasitic protozoa, *e.g.*, the malarial organism in which the insect carrier is not only mechanically serviceable to the germ but physiologically necessary for its sexual development.

At present, however, the only known method of transmission is mechanical, and this has raised the important question whether, in face of the contrary evidence of the regional correspondence of *Gl. palpalis* and Sleeping Sickness, species of *Glossina* other than *Gl. palpalis* or even other biting flies may not, under certain circumstances, act as carriers of the trypanosome concerned. On the answer given to this question depends the future of this Protectorate as regards the spread of the disease. *Gl. palpalis* has not been found in Nyasaland, and in North-Eastern Rhodesia its distribution has been fairly well determined to be confined to a large part of the Luapula River and some of its confluent, and to Lakes Mweru and Tanganyika with their larger tributaries, especially the Lovu River.

On the other hand, the distribution of *Gl. morsitans* is extremely wide, so that very few parts of either this country or of North-Eastern Rhodesia, except the elevated treeless plateaux, can be said to be absolutely clean; and the possible result of the infection of these enormous fly areas by *T. gambiense*, should



*Gl. morsitans* be proved to be a carrier, are too appalling to contemplate.

The tsetse flies are dull coloured brownish flies, not very large in size, being a little larger than the ordinary house-fly. The proboscis projects horizontally in a line with the axis of the body. A tsetse fly when at rest can be at once recognised by the wings, which almost completely overlap like the blades of a pair of scissors. In other flies which resemble the tsetse more or less closely, and like it suck blood greedily, the wings are always separated a certain distance when the flies are at rest. The venation of the wings is characteristic, the bend in the course of the fourth longitudinal vein, before it meets the anterior transverse vein, being absolutely diagnostic. The fly bites furiously during the day, less so in the evening, only rarely during the night.

The differences between *Gl. palpalis* and *Gl. morsitans* (the common tsetse fly of the Protectorate) are not very apparent to the ordinary observer, but on closer inspection it is seen that *Gl. palpalis* is much darker in colour than *Gl. morsitans* and that its hind tarsi are entirely dark. In *Gl. morsitans* the last two joints only are dark, the remainder of the tarsi being uniformly pale.

*Gl. palpalis* is found always near water. The water must be of good volume, such as a fair-sized perennial stream or lake. Trees must overhang the water or form good shade on its banks. The denser the foliage, consequently the shade, the more abundant the fly. It is never found away from water. On lakes it is more abundant than round mouths of rivers where ambatch trees are likely to grow. It is never found in swamps and marshes where there is no shade. It is a greedy blood-sucker, but not so voracious as *Gl. morsitans*. It attacks tentatively from below by settling on the boot or leg, and does not bite at once. *Gl. morsitans* makes straight for the neck and shoulders, and bites at once. The surest way to find it is to go on a river or lake in a canoe and creep along the banks under the trees. By walking along the banks of a river under the trees it is frequently missed. It is unusual to find it at landing places or ferries much used by natives, or even at places where women draw water. If trees have been destroyed or cut down at any place on the river bank it is seldom or never found there. The greatest distance it was found from water was at Mweru, where it was found in the trees fringing the lake separated from the water's edge by 50 or 60 yards of sandy beach. It is never found in mid-stream unless carried out there from the banks. Rivers carrying *Gl. palpalis* may be safely crossed if a sufficient clearing is made at either landing place. Fishing in African rivers supporting *Gl. palpalis* may become a most dangerous occupation.

*Gl. morsitans* is found always in dry, thickly wooded, well shaded country, not necessarily near water. Its distribution is widespread, and continuous belts of it extend for a distance of



150 miles or more. It is a voracious feeder and attacks from behind, generally the shoulders or neck, and bites at once. It is not necessarily found in association with game. On open plains where game is frequently found in abundance it is scanty or not found at all. In thick bush, where perhaps no trace of game spoor is to be found, it is most abundant. In buffalo country it is generally to be found, but it is also found abundantly in countries where buffalo are not found and said not to exist. Its great enemies are sun and wind. It is only found in well-shaded, wooded country which affords protection from sun and wind. In open country or in patches of country where trees have been lopped in the making of gardens it disappears, while in the surrounding bush it will swarm. It is not found in villages where the surrounding trees have been cut down, though the village be situated in the midst of a belt, except when carried in from the surrounding bush. It is also found in dry, stony river beds in the shade. It avoids human food and human surroundings.

The whole system of the prophylaxis of Sleeping Sickness as applied to this Protectorate is based upon three main points to which the study of the disease has given prominence:—

1. That Sleeping Sickness is propagated by tsetse flies, *Gl. palpalis* in particular, therefore the most important preventive measure is the removal of all villages outside the range of this fly. This measure has been adopted.

2. That the enlargement of the neck glands is the chief if not the only symptom of the early stage of the disease, therefore gland palpation and puncture, with segregation of those cases found to be infected, is applied as universally as possible.

3. That the disease is carried from infected to non-infected areas, chiefly by uncontrolled native movements, therefore regulations providing for a system of patrol and surveillance all along those borders of the Protectorate most contiguous to the infected areas, with entry only under medical permit, and the punishment of all infringements of these regulations, have been adopted.

The later stage of Sleeping Sickness is always fatal, whether the prognosis is as grave in the first stage of the disease, when trypanosomes are not found in the cerebro-spinal fluid, is at present undecided.

Very few drugs are of real value in the treatment of the disease. Lately good results have been reported by the combined administration of Atoxyl and Mercury, and Atoxyl and Orpiment, but whether permanent cures can be obtained by these means has not been proved. It must be the aim, therefore, to prevent these diseases rather than cure them.

# AGRICULTURE.

## Cotton.

The following table shows the quantities of ginned cotton exported during each financial year since the commencement of the industry:—

Year.	Total Acreage under Cultivation.	Crop exported to 31st March of each year. lbs.	Valuation for Export purposes, per lb.	Valued at £.
1901-2	60	Experimental parcels.	—	—
1902-3	580	629	5d.	3
1903-4	7,000	56,577	5d.	1,777
1904-5	21,900	285,185	5d.	5,941
1905-6	10,012	776,621	5d.	16,180
1906-7	7,017	526,119	7d.	15,345
1907-8	8,659	403,486	7d.	13,999
1908-9	8,975	756,120	6d. to 1s.	28,353

(It should be noted that the export of any one year is from the preceding year's acreage).

Although cotton has been cultivated such a short time in Nyasaland, it now heads the lists of exports in value.

The industry in this country has received attention from the British Cotton Growing Association, their local Agents being the African Lakes Corporation, Ltd., Blantyre, who are empowered to arrange advances on crops, etc.

Cotton seed is exempted from Import Duty, but its import is prohibited from countries other than Egypt as a safeguard against the introduction of weevil.

A Report on the Cotton Growing Industry written by Mr. S. Simpson has been published by the Colonial Office (African No. 792). It is a general guide to cotton cultivation in the country, and copies can be obtained from the Agricultural Department, Zomba. Reports connected with cotton cultivation, green manuring, &c., are published in the Bulletins issued by the Agricultural Department. Information on these subjects can be obtained from the Director of Agriculture, Zomba.

There are 8,975 acres of cotton under European cultivation, and about 3,000 acres under Native cultivation.

The industry is thoroughly established and gaining in favour with Europeans and Natives alike.

The quality of Nyasaland Upland is very superior and generally commands a premium on the same class of cotton grown in America; its silkiness and length is surpassed by none of the long staple Upland varieties.

Some very good Egyptian cotton has been produced on the river levels, but as a general rule it is not up to the standard of the same cotton produced in Egypt under irrigation.

Government is encouraging the cotton industry by the free distribution of seed to natives through the medium of the District Residents.

No greater incentive could be given to the cotton industry in Nyasaland than the extension of the railway from Blantyre to Lake Nyasa and from Port Herald to the East Coast, thus connecting Lake Nyasa with the sea coast, as it would solve the question of transport and tap those districts with the largest native population. There are no ginneries north of Zomba, and the expense of transporting seed cotton by native carriers from the Lake districts to the ginneries and thence by rail and river to the coast makes it impossible to export profitably the crop from outlying districts even when paying only  $\frac{3}{4}$ d. per lb. for seed cotton. This gives the native little encouragement or compensation for his work, and therefore he only produces sufficient to pay his Hut Tax.

### HIGHLANDS.

Egyptian varieties were tried here on a large scale some three years ago, with disastrous results, as the growing season is too short and the temperature too low.

No Egyptian is now grown in the Highlands. Nyasaland Upland is the variety recommended, and is being cultivated as a commercial success.. The crop must be grown on the loam soils in sheltered situations, so that the short periods of cold weather and high winds in the growing season can do little harm.

**METHOD OF CULTIVATION.** The land should be cleared as early as possible and all rubbish burnt; the soil then well opened up.

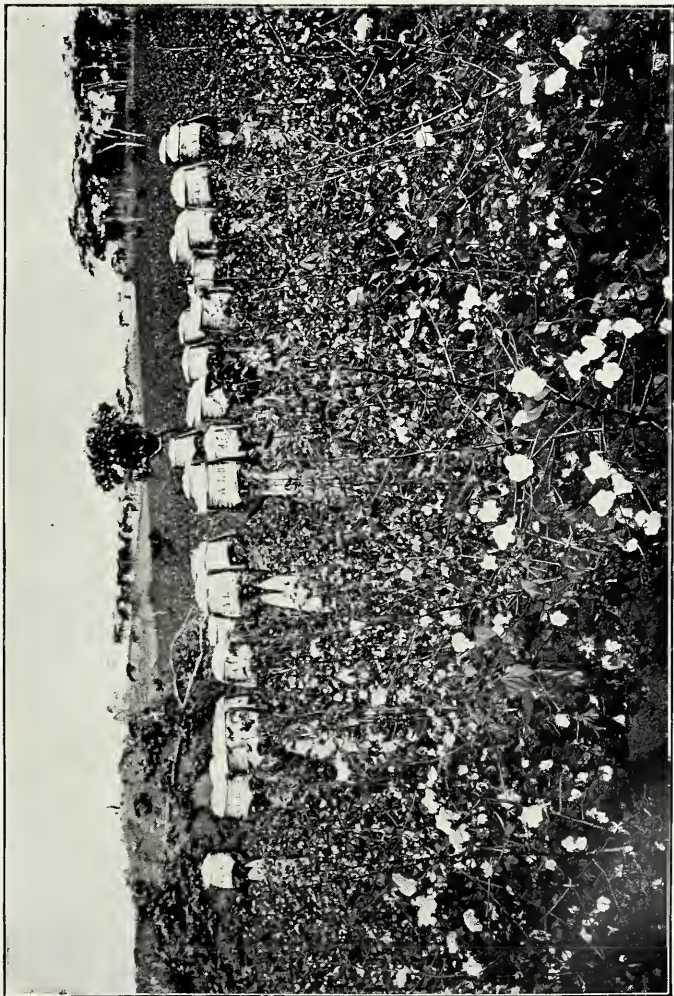
Cotton is a deep rooted plant so that the deeper the cultivation the better. Open drains are essential to carry off the heavy rainfall, and prevent the scouring of the land. The provision of drains also increases the feeding area of the plants, and makes them more independent of outside sources of moisture.

**TIME OF SOWING.** In the Highlands the seed is sown as early as the rains admit. Owing to there being a comparatively short growing season to contend with, planting must be done at the earliest opportunity.

**METHOD OF SOWING.** This must be done on ridges and the seed sown on the top. With irrigation the seed is planted on the side of the ridge about two-thirds of the distance up its slope. The seed should be used liberally to ensure an early stand of plants.

**DISTANCE APART OF THE RIDGES.** No hard and fast rules can be laid down as to the distance between the ridges. It varies according to the kind of soil and varieties of cotton cultivated. Four feet is a good average distance, but on sandy, worn-out or clayey soils from 3 to  $3\frac{1}{2}$  feet is ample. Greater distances are allowed in America to permit of the use of draught animals in cultivation

**RESOWING.** As soon as the plants are visible above the ground, the blanks must be filled up with seed soaked in water overnight. This hastens germination.



*Photo by R. H. Salmon.*

A COTTON FIELD, NEAR BLANTYRE.





**THINNING.** This should be done during dull weather when the plants are about 6 inches high. The remaining plants do not then suffer much by being disturbed. The American practice is to leave single plants only about every 14 inches, whilst in Egypt the two best plants are allowed to remain at a distance of about 18 inches in the row. The American plant has a more bushy growth than the Egyptian, so that plenty of room is required for full development.

**HOEING.** This should be done continually as soon as the plants are up, and the soil earthed up to the stems. This operation keeps down weeds and conserves the moisture in the soil. During a drought a hoeing about 2 inches deep has a wonderful effect. When the plants are sufficiently large to keep down weeds, nothing more need be done until the crop is ready for picking.

**MANURING.** Wherever manure is available it must be applied to the crop. Cotton responds well to organic manures like farmyard manure and cotton seed. Such manure ought to be put on to the land at least 6 weeks before the seed is sown, otherwise the crop is retarded in ripening. A suitable dressing of farmyard manure is 10 tons per acre, whilst disintegrated cotton seed at the rate of 5 cwts. per acre is excellent. Cotton seed is a much superior manure after the oil has been extracted.

The following statistics of the yield of cotton in the Highlands are interesting. The Magomero Estates of A. L. Bruce Trust had  $939\frac{1}{2}$  acres under cotton, and shipped 60 tons 11 cwts. of lint. The average output per acre was approximately 140 lbs. The best fields gave 180 lbs., whilst the worst averaged  $127\frac{1}{2}$ . At their Lukulezi Estate about 300 acres were under cotton and yielded at the rate of 180 lbs. of lint per acre.

The Blantyre and East Africa Co., Ltd., have tried from 20 to 30 acres on various estates with great success. One estate, manured and well sheltered, gave 602 lbs. of seed cotton per acre.

The Manager of the African Lakes Corporation sent in the following report which has been received from the home office:—"We have received the small samples from first pickings at Nchewe and Gotha, and are pleased to inform you that they are considered by our Brokers as about the best results from American seed they have seen produced in Africa, and if the bulk be as good in colour and staple it will be a highly satisfactory result." The Gotha sample of American cotton, planted 18/11/07 and picked 24/3/08 is valued at 7d. to  $7\frac{1}{4}$ d. per lb. ginned, and is described as "of good colour, staple  $1\frac{1}{4}$  in. strong moderately fine." The Nchewe sample of American cotton, planted 6/11/07 and picked 19/3/08 is valued at  $7\frac{1}{4}$ d. to  $7\frac{1}{2}$ d. per lb. ginned, and is described as "of good colour, staple  $1\frac{1}{4}$  in. to 1 in. strong and fine."

The 1909-10 crop realised in some cases as much as  $10\frac{3}{4}$ d. per lb., and was pronounced by experts to be the finest Upland cotton ever yet produced.

## LOWER LEVELS.

On the lower levels Egyptian varieties are most commonly grown—the Mit-afiffi having proved the most regular cropper.

**SOILS.** The lighter class of soils have given the best results. The heavier soils rich in organic matter are very liable to make the crop much more susceptible to fungoid disease, which has been very troublesome on the lower levels.

This disease generally appears in the month of March, and is most severe on early-sown cotton planted in heavy, wet soil. American cotton is practically immune, and is now being grown with success in situations unsuitable for Egyptian. On the Chirala Estate, Mapperera, a hybrid Egyptian-American, has been produced which exhibits immunity to a remarkable extent. Experimental work is being conducted to solve this problem.

Egyptian cotton is peculiarly susceptible to this trouble against which no methods at present known to science are of the least avail as a direct remedy. Preventive methods can only be practised, and if these are persisted in it is hoped that the plant may become so thoroughly acclimatised that it will be able to withstand the very trying conditions which sometimes prevail in these districts.

**YIELD.** There is little information available as to the yield per acre, but 175 lbs. of lint per acre has been obtained on a small acreage. As a rule it has been below 100 lbs., and this gives a profit with careful expenditure, as the quality of the product is good and brings a high price.

A small area is under Brazilian cotton, but Egyptian and American are more popular; so far the best results are obtained from imported Egyptian.

**TREATMENT OF SEED.** Seed from infected areas must undergo some kind of treatment before sowing, so as to destroy the spores of any fungus which may be present. Many methods are efficacious, but either of the two following can be adopted with advantage in this country:—

(a) THE CORROSIVE SUBLIMATE METHOD.

Treat the seed with corrosive sublimate in the proportion of 1 in 1000 of water by weight, or 1 lb. of the chemical to 100 gallons of water. The seed is soaked for at least half an hour, and then taken out and dried thoroughly. It may be stored or sown at once. Corrosive sublimate is a deadly poison, and great care must be exercised when dealing with it.

(b) THE FORMALIN METHOD.

This method has recently become extremely popular and deserves to be widely known. Formalin is an efficient fungicide, and easy to manipulate, and sold commercially under the name of formalin or formal. It is used at the rate of 1 pint of formalin to 50 gallons of water. The seed to be treated is spread

out in piles and sprinkled with the solution from a sprayer or watering can.

During the process the seed is shovelled over a few times to ensure that all of it is thoroughly wetted. It is then left overnight in heaps, dried and stored or sown.

**TIME OF SOWING.** January sowing has given the best results, although under irrigation later than January would be advisable.

**METHOD OF SOWING.** Either on the flat with deep cultivation or on ridges. The flat ensures a better stand of plants in very dry weather.

**RATOONING.** This should never be done in the Highlands. When the crop is finished the plants must be uprooted and burnt.

The strongest objection to ratooning cotton is the fact that diseases and insects have more opportunities for destructive work, and special precautions must be taken to keep pests well in hand.

### GENERAL.

**INSECT PESTS.** The cotton crop has many enemies, and clean farming cannot be too strongly urged as well as the destruction by fire of all rubbish connected with the crop. Insects are fed and harboured by weeds and rubbish, until the growing crop is ready to provide a suitable feeding ground.

The most destructive are cutworms (*Aphidæ*) and the boll-worm. The most effective remedy is to gather the insects, employing children for this purpose, and should be looked upon as part of the systematic cultivation of the crop.

Paris green may be applied as a powder, or in suspension in water, but labour is cheaper than chemicals in Nyasaland.

(a) When applied as a powder, it is put on in dry weather. To make bulk and the distribution more even and perfect, it is mixed with air-slaked lime, flour, or any very fine substance. 1 lb. of Paris green (and it may be bulked up to 100 lbs.) is sufficient for 1 acre.

(b) When applied in suspension in water, 200 gallons of water to 1 lb. of the poison may be applied per acre. Paris green mixes much better if equal quantities of slaked lime are thoroughly incorporated with it. This admixture also makes the poison have a less damaging effect on very young foliage. Flour may also be added so that the distribution can be effectually supervised. Paris green is a virulent poison so care must be taken when it is being applied.

**HARVESTING.** More attention needs to be given to the harvesting of the cotton crop. Good cotton may easily be depreciated 2d. or 3d. per lb. by careless and slovenly picking. All refuse and dried leaves should be discarded at the time of picking. This is little trouble, but if the refuse be collected into

the baskets it becomes entangled in the mass of cotton and cannot possibly be thoroughly picked out.

A good plan is to arrange the workers into two gangs: a large one for picking, and a smaller one of the more reliable people to sort the cotton after it is brought in. Both gangs should be well superintended.

The natives are inclined to gather only the larger bolls and leave the smaller ones because they give a little more trouble.

Pickers should be instructed not to pick cotton from the half open bolls as this immature cotton depreciates the value of the staple.

Cotton should be well sunned before ginning.

Insufficient sunning of cotton makes it difficult to gin and leaves the staple weak.

The different qualities of cotton must be baled separately, and exported under a similar mark.

The cotton which dries away in the boll and never comes to maturity is very weak. This may be greatly improved for ginning and selling purposes in the following manner:—Make a rectangular frame 10 ft. long by 6ft. wide on the top of which is nailed  $\frac{1}{2}$ -inch galvanized wire netting. The immature cotton is then beaten with sticks which opens it up, thus allowing the sun and air to get into it.

**STORING SEED.** All seed for sowing purposes should be kept in a store free from rain, with plenty of light and air. It must never be kept in a large heap or the mass becomes heated, and thus the germinating power is lowered.

The most suitable way to store seed in this country is to put it into “*nkhokwes*,” which should be placed in a large store. These “*nkhokwes*” need not be well made, but should be raised some distance from the ground so that there is free circulation of air. Various kinds of seed can then be kept separate, whilst there is no danger from rain.

Age has a great effect on the germinating power of seed. For fresh cotton seed it is 58 per cent., at 5 months it is 92 per cent.; whilst cotton seed 17 months’ old has a germinating power of 88 per cent. Seed rapidly loses its vitality in each succeeding year.

**PREPARATION FOR THE MARKET.** Messrs. Wolstenholme & Holland, Cotton Brokers, Liverpool, draw attention to the irregular manner in which cotton from Nyasaland is shipped. Not only do many lots contain two or three growths of cotton, Afffi, Abbassi, Joanovitch and American being indiscriminately mixed, but it is often that different growths are mixed in the same bales.

This not only causes annoyance to the buyers when not detected by the warehouse staff, but extra expense and needless work in separating the qualities. Some buyers take the divided bales at market value for the benefit of the industry, but the majority would expect a very considerable discount in price.





*Photo by R. H. Salmon.*

COTTON READY FOR EXPORT, NEAR BLANTYRE.





## Tobacco.

The tobacco exports are as follows:—

Year.	Total acreage under Cultivation.	Crop exported to 31st March of each year. lbs.	Valuation for Export purposes. per lb.	Valued at £.
1899	Not known	2,240	5d	47
1900	69	4,480	9d. } (M'f'd.)	113
1901	24	1,482	4d. } (raw.)	25
1902	88	14,369	7d.	425
1903	441	17,764	4d.	296
1904	944	28,754	4d.	479
1905	421	56,826	4d.	947
1906	955	199,020	4d.	3,317
1907	2,330	413,216	4d.	6,888
1908	1,843	554,300	4d.	9,238
1909	2,368	570,102	6d.	14,253

(It should be noted that the export of any one year is from the preceding year's acreage).

The following Notes have been contributed by A. W. Boyd, Esq., the Imperial Tobacco Company's Expert, Limbe.

The culture of bright tobacco is a comparatively new industry in Nyasaland and the following notes may be of some use to intending planters of this crop. English manufacturers have already reported very favourably on Nyasaland tobacco, and now that the railway is running from Blantyre to Port Herald there is apparently no reason why tobacco should not become a flourishing industry.

**SOIL.** Tobacco will grow on most of the Uplands soil; a rich light gray or sandy soil is to be preferred, although tobacco grown on dark loam or heavy soil seems to be easily cured and grows a nice smooth leaf in a normal season.

Tobacco may be planted on heavier soils here than where fertilizers are used extensively. Although tobacco grows well without the use of manures we believe that either chemicals or green manures or leguminous plants will greatly improve both quality and yield.

**SEED.** On most soils any of the standard varieties such as Conqueror, White Stem Oronoco, Adcock, Hester and any of the Pryors have given good results.

It will be necessary to experiment with other varieties to find out which are the most suitable.

At the same time all varieties which have the reputation of growing a small leaf should be carefully avoided as the tendency of the plant here is to produce small leaves.

**NURSERIES.** A good rich friable soil should be selected as near a stream as possible for the convenience of watering the young plants. The land should be thoroughly dug and all roots and trash removed. Beds should then be made 3 ft. 6 in. wide and raised slightly, say 4 in. to 6 in. A light layer of grass should then be laid on the beds, and on top of this sufficient wood or brush to give it a hard burning.

All unburnt matter should then be removed, the ashes lightly raked in and the beds firmed down.

Seed may now be sown. A dessert spoonful of good seed mixed with ashes or sand may be sown to every 50 yards of beds. Beds should now be raked lightly or firmed again and a covering of grass put on: as soon as the seedlings begin to show, the grass should be taken off the ground and placed on low shade as is done in coffee nurseries. Great care must be taken to protect the plants from direct rays of noon-day sun and keep them well watered.

Just before planting the shade should be gradually thinned out to toughen the plants. Nurseries may be sown from 1st October to 15th of November, according to acreage to be planted. Good plants are essential.

**PREPARATION OF SOIL.** The land should be dug deep and closely at least twice and then made into ridges or small hills 3 ft. 3 ins. apart by 3 ft. All gardens should be well drained and the rows should run so as to get the most heat and light from the sun, as many diseases are due to damp and coldness. If after the preparation of the soil there are heavy rains it is best to fork up the hills just ahead of the plants: this will save a hoeing and the plants will stand much better and start quicker.

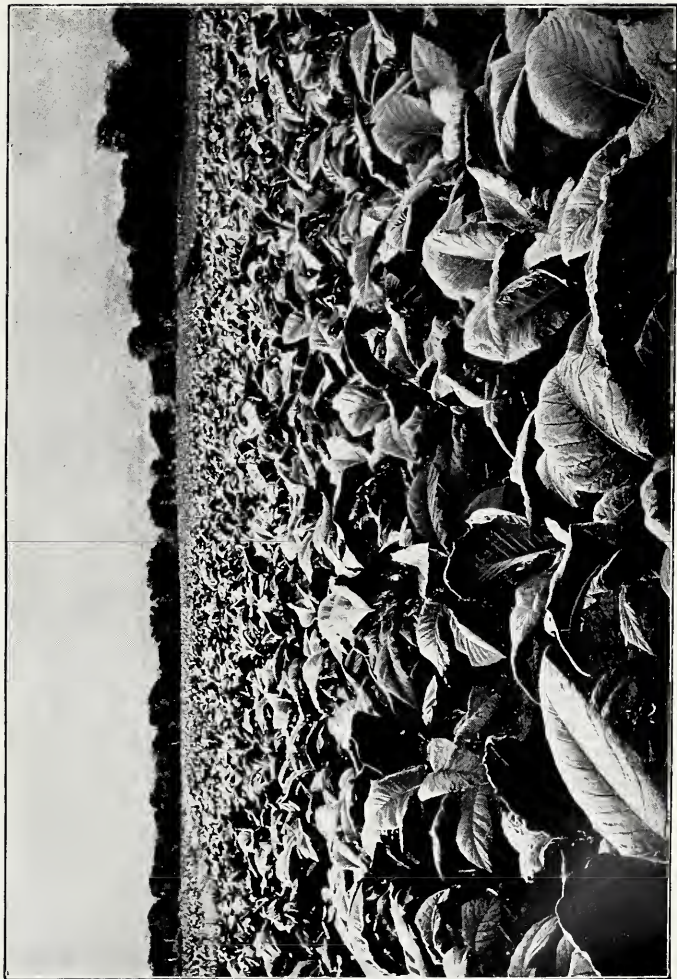
**TRANSPLANTING.** This work should be commenced with the first good rain in December and may be continued at intervals until the 15th of February according to seasons and acreage to be planted; great care should be taken not to plant too large an acreage at any one planting as fewer barns will be required and more regular employment is given for the labour.

Large healthy plants are the best as they stand the sun and start much quicker. Plants should never be allowed to remain in nursery too long as they get hard and will often flower before they produce many leaves. All blanks should be supplied as soon as discovered: the more even the crop the less trouble in cultivating and harvesting.

**CULTIVATION.** As soon as the plants have set or begun to grow the soil should be loosened and a little dirt pulled up to the small plant; this should be repeated as often as necessary, always hoeing further from the plant each time so as not to break any of the small roots. The soil should never be allowed to get hard or woody. If a quick growth is desired all cultivation should cease as soon as the terminal bud appears. Tobacco must be kept clean.

**INSECTS AND DISEASES.** Wire worms and cut worms are often very bad on old gardens, destroying many plants: when they appear in numbers it is always best to open new gardens and allow the old ones to rest for two or more seasons.

Grasshoppers are also very common, and it is best to have them caught by small children or poisoned with Paris-green. Leaf miner is also in evidence at certain seasons, and may also be killed by use of Paris-green.



*Photo by R. H. Salmon.*

A TOBACCO FIELD, NEAR ZOMBA.





Field mildew seems to be the worst disease in Nyasaland, more especially on stiff soils and high elevations. As this is believed to be caused by cold and dampness, the best remedy is to run the rows so as to get the most heat and air, and remove all infected leaves as soon as they appear.

Some tobacco has been badly affected by a brown spot, which was possibly caused by heavy and continuous rains, but this disease may not be expected in a normal season.

**PRIMING.** When the majority of the plants have grown to a height of six to ten inches, several of the ground leaves should be pulled off and thrown away as this gives a better growth to remaining leaves, and will be more easily cultivated.

**TOPPING.** When the terminal bud is large enough to be removed without injuring the small leaves that are left on the top, a few boys should be taught to break out the bud, never waiting, as many planters do, to let the entire field go to flower. This operation requires skill and good judgment as no part of the cultivation more affects the quality, colour and texture of the leaf. One must always be guided by the seasons at the time of topping, as a strong healthy plant will produce more leaves than a small weak one. If a plant is topped too high, break out one or more leaves as soon as sure of the number it will produce. If too low, allow a sucker to grow in the top, and top this one or more leaves as the plant will bear. The top leaves should grow to be of the same size as the middle leaves. Always select seed plants from the early tobacco, and never save any but the most perfect of the variety. Strip off the top leaves together with several of the suckers only allowing a small cluster on top to remain. A paper sack should now be tied over the blossom to prevent crossing with other varieties and keep out caterpillars. Suckers should be broken off as soon as they appear, as they take strength from the plant. For the present the use of imported seed from Virginia is advisable.

**HARVESTING.** After the plants have been topped the leaves grow larger and thicker and in due course begin to ripen; the length of time depends on the weather. When labour is plentiful the best results will be obtained by harvesting the leaves singly.

When the bottom or ground leaves assume a yellow tint they should be harvested. In some cases, and especially with plants that have been topped too high, the ground leaves decay very quickly, so they should never be left so long as to become yellow. It is better to harvest ground leaves too soon than too late. After the ground leaves are harvested plants usually ripen from the bottom upwards; the ripe leaves may be known by assuming a yellow tint or becoming mottled. The field will have to be gone over several times, only taking the leaves as they ripen; the middle leaves will be harvested at the second or third pickings and the tip lastly. The leaves should be handled very carefully and taken immediately to a shed and tied in pairs, stem to stem, on a bamboo and placed in the barn from six to eight inches

apart, according to size of tobacco. Tobacco if very ripe may be harvested just after a rain and with the dew on it, but it is always best to wait a few days after a rain if the weather is good and tobacco is not over ripe. If the tobacco is placed too closely in the barn it may be difficult to dry it clear, and if it is too far apart it will not yellow but dry too quickly. Ripe tobacco only must be gathered if good colour, flavour and quality are desired.

**CURING BRIGHT TOBACCO.** It is impossible to give exact directions, as each curing varies a few hours either in the yellowing or drying stages according to the tobacco; but the following formula may be some guide if ripe tobacco has been harvested:—

*Formula.*

(a) **YELLOWING STAGE.** As soon as the barn is full, which should be in a day, raise temperature to  $90^{\circ}$  for 12 hours to 15 hours,  $95^{\circ}$  6 to 8 hours,  $100^{\circ}$  6 to 8 hours,  $105^{\circ}$  6 to 8 hours,  $110^{\circ}$  12 to 15 hours until tobacco is yellow and in drying condition.

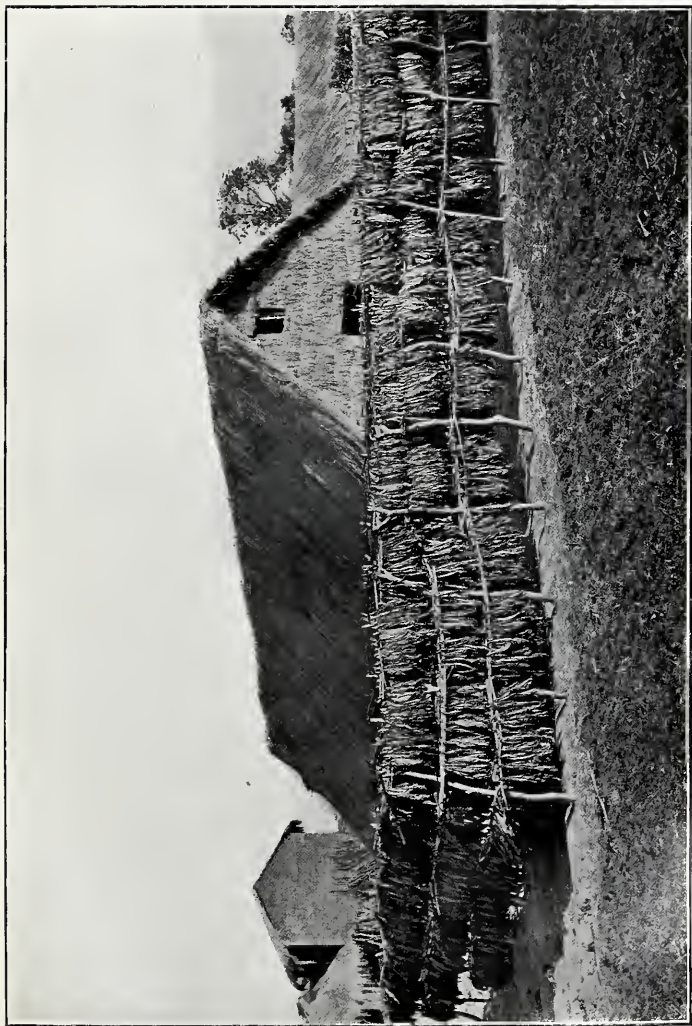
(b) **Fixing Colour.** Raise temperature quickly to  $120^{\circ}$ , throw open doors and all ventilators and cool to  $110^{\circ}$  from 3 to 5 times or until tobacco is free of sweat and in drying condition; remain  $120^{\circ}$  10 to 15 hours,  $125^{\circ}$  4 to 8 hours,  $130^{\circ}$  8 to 12 hours,  $135^{\circ}$  6 to 10 hours or until leaf is thoroughly dry.

(c) **Drying Stem.**  $140^{\circ}$  5 hours,  $145^{\circ}$  3 hours. Temperature may be advanced rapidly until  $165^{\circ}$  or  $170^{\circ}$  is reached. Remain at  $170^{\circ}$  until stem is thoroughly dry all over barn; when barn has cooled to  $120^{\circ}$  all doors and ventilators should be opened and water poured freely on the floor so as to get tobacco in handling condition quickly. It must be understood that in the yellowing stage the sole object is to make the tobacco sweat and yellow; to do this it is often necessary to throw water freely on floor and sides of barns until  $110^{\circ}$  is reached. If the temperature is raised properly the leaves become sticky and sweat more and more until the  $110^{\circ}$  stop is reached. At this temperature the leaves should sweat freely and yellow rapidly for a few hours, and then become dry and the tip begin to curl up.

(d) **Fixing Colour.** The sole object now, if the tobacco is yellow, is to stop the sweating and make it dry clear. Heat and air are essential. If too much heat is given the tobacco will splock, and if too little it will sponge. This stage is very interesting, and the tobacco must be watched closely giving more heat and air when necessary.

**BULKING.** As soon as the tobacco can be handled without breaking, it should be taken off bamboos and bulked down in a good dry building; in every case the leaves should be bulked with the butts or heads outward, never exposing the tip to the air.

Each curing should be bulked in a separate pile and examined every few days to be sure that it does not mildew. After a few days the tobacco may be graded. A pit may be necessary for the conditioning of the crop.



*Photo by E. S. England.*

SUN DRYING TOBACCO, ZOMBA.



GRADING. This consists of sorting leaves according to size and colour and quality, and can only be learned by experience.

BUILDINGS. A barn 20 ft. by 20 ft. with the first tiers about 7 ft. 9ins. from the ground and 18 in. apart vertically; 4 ft. in width and 6 to 8 tiers high makes a good barn where there is a large crop. Each barn should cure from 10 to 13 acres if planted at good intervals. A small ventilator in each gable to give air when fixing colour is useful. It is essential to have good flues or otherwise it will be impossible to regulate the heat properly. Sufficient buildings are a necessity.

### Coffee.

The Coffee exports are as follows :—

Year.	Total acreage under cultivation	Crop exported at 31st March of each year.	Valuation for export purposes, per lb.	Valued at £.
1894	Not known	93,118 lbs.	Not known	Not known
1895	"	165,320	5d. and 6d.	4,133
1896	"	322,000	"	7,136
1897	"	762,382	"	16,426
1898	13,299	861,034	5d. and 7d.	22,412
1899	11,816	809,758	"	23,756
1900	12,191	2,148,160	"	62,245
1901	16,917	1,248,402	5d. and 6d.	26,576
1902	10,713	699,030	"	14,751
1903	11,287	1,007,092	6d.	25,177
1904	8,867	714,555	6d.	17,869
1905	4,580	1,303,655	5d.	27,153
1906	5,273	773,952	5d.	16,124
1907	5,565	454,111	5d.	8,930
1908	6,134	780,133	5d.	16,252
1909	6,037	934,896	5d.	19,477

(It should be noted that the export of any one year is from the preceding year's acreage).

Market prices in early years were good, the season of 1896 perhaps touching the best figures, when some lots were sold in London at 114s. per cwt. while the majority of the best lots of that year fetched over 100s. In 1897, many lots secured high prices, several reaching 105s., 107s., and 111s., and one lot again touching 114s. These were the highest prices ever obtained for Nyasaland coffee, the produce of those seasons being of exceptionally high quality and eagerly sought after.

Several new estates were opened up at this period resulting in an increased export in 1900 and 1901. At the time of the increased export, however, prices fell back, although some lots secured good figures in 1899 and 1900. The crops of 1901 showed a decided decrease in market value, the highest figures being 70s. per cwt., while the average may have been about 55s.

There has been no appreciable rise in the price of coffee since 1901.

The lowering of the market value of Nyasaland coffee may be attributed chiefly to the fact that the coffee market of the



world has been abnormally low, but partially also to the deficient rainfall in the Protectorate, which on some estates in 1899 almost amounted to drought. In 1900 there was a drought which greatly affected estates in the Shire Highlands. The market reports at that time were that the beans were smaller than usual and lacking in body and colour. Brokers remarked also that much of the crop was reduced in quality by the presence of broken or chipped beans, due to bad pulping. Insect pests were regarded as having done much damage, but perhaps 10 per cent. would cover the decrease in value from this cause. Trials have been made from time to time with Liberian, *Stenophylla* and Abeokuka Coffees with unsatisfactory results—Coffee Arabica being best suited to the Shire Highlands.

Although much coffee has been successfully grown where the temperature (shade) at its highest touches 100° Faht. (150° to 160° in the sun) with rainfall from 36 to 50 inches annually, better results may be expected where the highest shade temperature does not exceed 93° or 95° (and that rarely) and where the rainfall amounts to 50 to 70 inches annually. Some districts annually receive about 60 inches, others again rarely exceed 35 inches, while in one or two exceptional cases as much as 90 to 100 inches have been registered.

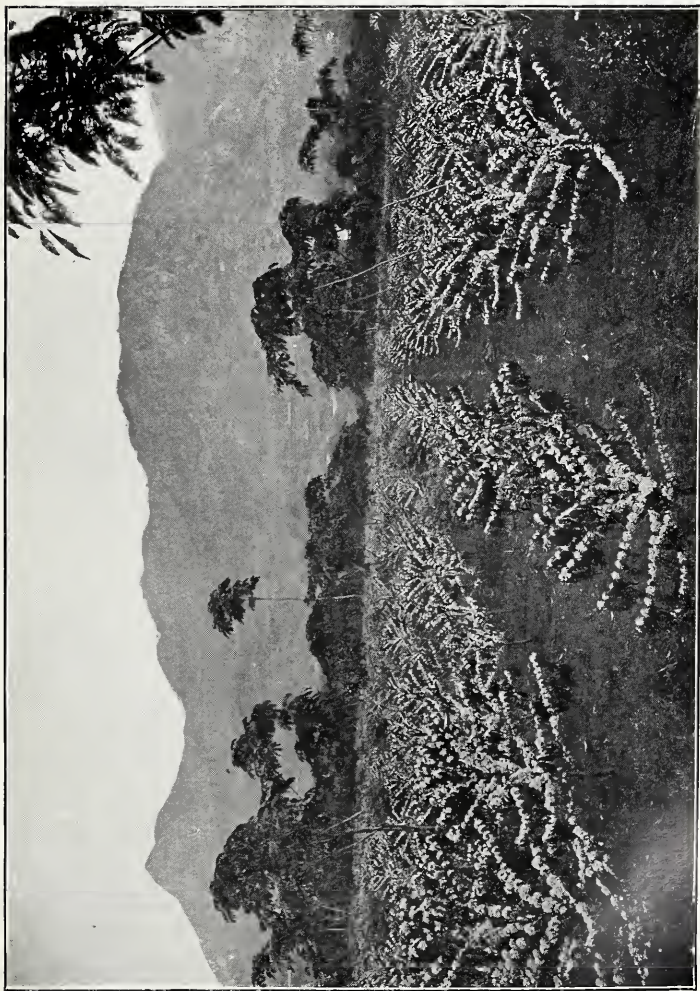
Good coffee land is available for lease or purchase, the latter at about ten shillings per acre. Coffee has proved to be a most excellent mainstay on many estates, and the area devoted to its cultivation is increasing.

The best soil for coffee in Nyasaland is a light free-working loam, especially if it is somewhat limey. The plants stand for many years on such soils, and produce crops for a large number of years.

The plants themselves do not attain a large size, so that a suitable distance for planting out is five feet by four. A small area must be planted up yearly. The young plants should be well cared for, grass shade being provided the first dry season.

Clay soils are not suited for coffee. In dry seasons they give a fair return, but the plants are short lived, bearing only for three or four years.

The soil should be rich, moderately moist, and contain plenty of humus or vegetable mould; consequently the plant thrives best on a red, loamy clay containing combinations of iron, and covered with the humus produced by the decay of vegetable matter produced by dense forest. The percentage of clay should not exceed 60 per cent. The berry produced on such soils is found to contain more aroma, and the bean is heavier when compared with those of other localities. Shelter from wind is of paramount importance, and should not be sacrificed for rich soil, as the latter can be artificially obtained much quicker than the former. In well wooded country the blocks should not exceed 50 acres each in area. Flat water-logged land must be avoided, and on the other hand very steep



*Photo by R. H. Salmon.*

COFFEE TREES IN BLOOM, NEAR ZOMBA.



slopes are objectionable on account of the wash from the rains carrying away the soil and exposing the roots of the bushes.

The selection of seed is of great importance. It should be taken only from carefully cultivated, healthy and vigorous plants, and not be gathered until fully ripe. It should be pulped by hand, unfermented, unwashed and dried in the shade. In transferring the seed beds to nursery beds the tap root should be shortened by a clean, oblique cut unless very short.

The land to be planted should preferably be trenched to a depth of eighteen inches, and a thorough system of drains arranged, to provide against the removal of surface soil in sudden torrents of rain. Coffee is an exhaustive crop, but the exhaustion is due more to the result of the peculiar method of cultivation than to the crop itself. Precautions against the removal of surface soil, if fully carried out, are generally found more efficient than the most expensive system of artificial manuring. The ground should be thoroughly forked at least once a year to a depth of twelve inches, and the surface soil maintained in a loose condition at all times. A thorough loosening of the surface soil in the dry season is as beneficial to the plants as an inch of rain.

Some attention is now being paid to green manuring which is the best way to prevent soil wash and conserve moisture during the dry season.

The crop is usually ready for gathering in May and June. The mechanical operation of pulping requires no further comment than that the discs or cylinders of the machines used should be so "set" as to reduce to a minimum the quantity of beans that get broken in their passage through the pulper.

It is at the curing stage that most care and judgment has to be exercised.

Where many tons of berries are to be handled, provision should be made by having several vats ready before the busy pulping time comes on so that the entire crop can be systematically fermented. The vats may be of brick and cement, but wooden ones are to be recommended as they encourage fermentation. The result of one day's pulping should be kept by itself, and not mixed with that of the following day. In fact, where large quantities are being pulped by several machines at once, the forenoon's pulping should be kept separate from that of the afternoon as fermentation takes place rapidly, and when a portion of late pulped coffee is mixed with early pulped, the mass must be kept in the vat longer than is necessary; the quality of bean is affected because of unequal fermentation and washing.

The pulped mass should be left in the vat from 24 to 36 hours according to the temperature, and still longer if the weather is dull and cold. If the mass cannot be covered, it is advisable to turn it all over once to equalise fermentation. When fermentation or putrefaction is complete the beans will feel hard

and gritty like sand, and should then be freely washed with clean water.

The coffee bean in its natural state is of good shape and plump, and as these are points of consideration in the market, care must be taken to preserve them as much as possible; newly washed coffee should never be put out in strong sunshine, as too rapid drying makes the beans curve in contracting; to obviate this it should be put on frames in a large shed, open at the sides where the free passage of air will gradually dry it while the natural shape of the beans gets "set." A few days will accomplish this, and the coffee may then be placed outside for several days, some matting being thrown over it at night to protect it from heavy dew.

Before coffee is finally dried and when a large quantity can be got together, it should be bulked in a heap on a covered wooden floor. A second fermentation then takes place which, with judicious turning, equalises the quality of the mass and has a mellowing effect.

If kept too long in this condition it will become musty and need removal to the open air. It may be kept in the heap from 10 to 14 days according to the effect produced, after which it should be returned to the open air for final drying and fixing of the quality. The quality of the bean depends on the perfection with which these final operations are carried out; when size, weight and quality are combined a high market value may be expected.

For purposes of comparison it may be said that dried beans numbering 35 to the half ounce are above average weight, while 40 to the half ounce may be regarded as a good average. As previously remarked the high prices obtained in the first years of coffee cultivation have been gradually lowered by a deficiency of rainfall in the growing periods, when irrigation might have helped to raise the weight of the produce. Or, in other words, if through a deficiency of rain the weight of the coffee beans would be 70 to 80 the half ounce, by timely irrigation the number can be decreased to 35 or 40.

### Chillies.

The export of chillies from Nyasaland is as follows:—

Year.	Total acreage under Cultivation.	Crop exported to 31st March of each year lbs.	Valued at £.
1900	Not known	21,280	443
1901	"	7,840	155
1902	408	19,780	412
1903	920	58,761	979
1904	725	66,350	1,064
1905	627	79,423	1,323
1906	161	22,280	338
1907	147	6,338	105
1908	168	32,419	540
1909	426	46,819	780

(It should be noted that the export of any one year is from the preceding year's acreage).



As a secondary crop chillie cultivation is of considerable importance, and remunerative. Several varieties of capsicum are grown, but the one in demand on the London market is known as the "Nyasaland chillie," a variety which when well cured presents a pod  $\frac{5}{8}$  to  $\frac{3}{4}$  of an inch long, of vermilion colour, which is maintained throughout a sea journey of from eight to ten weeks to the London market.

There is much confusion in the botanical nomenclature of capsicums, and it is doubtful whether the Nyasaland variety belongs to *C. annuum* or *C. frutescens*, but its distinctly shrubby habit favours its inclusion under the latter species.

Chillie cultivation is not attended with many risks. A light, well manured soil is however preferable, to which the plants should be transferred from nursery beds when they are about three inches high.

Chillies are generally hand picked by children, and it is a good crop to grow where this class of labour is plentiful and cheap. On cotton estates workers are frequently employed in the early morning picking chillies when it is too damp to pick cotton.

Picking lasts for four months in the Highlands and from six to eight months in the Lowlands.

Replanting every two years is advisable.

### Tea.

The best district for tea growing is on the south-eastern slope of Mlanje mountain which has a very high rainfall. About 600 acres are now under tea, although only a part of this is being cropped. A small quantity of the product is consumed locally, and an export trade is springing up.

A consignment of tea sent to London realised  $7\frac{1}{2}d.$  per lb., and was reported to be of considerable promise. Samples sent to Johannesburg have been valued at  $1s. 3d.$  per lb.

The curing of these samples was done with local appliances, but proper machinery has been introduced to deal with it.

The tea bushes give very little crop for the first three years. At six years of age they come into full bearing.

It is not probable that there will ever be a large export as the south-eastern slope of Mlanje is practically the only district with a sufficient rainfall and suitable climate.

Seed is being imported from India and it is reasonable to expect an increasing export for several years.

1908 was the first year in which tea figured amongst Nyasaland exports.

Year ending 31st March.	Total acreage under Cultivation.	Crop exported in lbs.	Local valuation per lb.	Value £.
1909	598	23,948	6d.	599

### Wheat.

A small quantity of wheat is grown chiefly in Central Angoniland. It thrives well when sown in the dry season under irrigation. If grown in the wet season the crop generally becomes badly infected with rust.

### Fibres.

Nyasaland appears to be peculiarly suitable for the cultivation of fibres of most kinds owing to the diversity of soils and climate.

The principal indigenous fibre plants are "Bowstring Hemp" (*sansevieria various species*), "Denje" (*Sida rhombifolia*), "Nzonogwe" (*Triumfetta rhomboidea*), and "Buaze" (*Securidaca longipedunculata*).

*Sansevieria* yields a fibre of excellent quality, worth from £28 to £30 per ton on the home market. It is, however, too slow a grower to repay cultivation in Nyasaland, and is nowhere found sufficiently plentiful to justify the preparation of the fibre from wild plants.

"Buaze" is a very strong and fine fibre, resembling flax in its chief qualities. Sample bales have been submitted to the Imperial Institute for experiment and analysis. It was ascertained that the bark from the twigs yielded about 37 per cent. of clean fibre. The commercial expert, to whom a sample of the fibre (retted at the Imperial Institute) was submitted, reported that if it could be produced sufficiently cheaply it might be used in the place of flax tow (at present quoted at about £30 per ton). The fibre having been sent from Zomba in the form of "ribbons," the expert stated that the gums present were most difficult to dissolve, and suggested that attempts be made to extract the fibre on the spot, from fresh plants, by scraping the bark immediately after its collection.

"Bauze" does not appear to be amenable to cultivation, and the shortness of the wild twiggy growth, in connection with the almost insoluble gums with which the fibre is surrounded, leads to the conclusion that it will not become a commercial success. The native method of preparing the fibre is to scrape the fresh bark, and then thoroughly chew it until the gums are removed. Extensive trials were made of "Denje" and "Nzonogwe" fibres sent to the Imperial Institute by the Agricultural and Forestry Department. Whilst both yield a fibre of similar character, that of "Denje" is finer, and the plant is more responsive under cultivation. The fibre of "Denje" when well prepared is equal or even superior to the best jute. The present price of jute (varying from £16 to £30 per ton) should give encouragement to the cultivation of "Denje" in Nyasaland, especially as no expensive machinery is required.

Ramie (*Boehmeria nivea*) is not a suitable fibre for Nyasaland unless it can be planted in rich loamy soil, and irrigated throughout the dry season. It is a very exhaustive crop, and if

long stems are to be secured season after season liberal manuring is necessary. The plant can be rapidly propagated, and in a rich irrigated soil will give two or three crops per annum. Machines for producing ribbons are numerous, but are not to be recommended, as there is a gum embedding the fibre which is very difficult to get rid of, especially after the ribbons have become dry. Faure's decorticator, which produces fibre instead of ribbons, costs about £40 f.o.b. London, and with two men to work it will produce from 120 to 150 lbs. of clean fibre per day.

The actual fibre of ramie is about the longest and strongest fibre known. Could it be easily and cheaply produced it would of necessity supersede cotton in many fabrics. At present people buy cheap articles of cotton, or mercerised cotton, yet ramie goods will last so much longer that they more than repay the extra cost. The best cleaned ramie fibre at present fetches about £35 to £40 per ton.

The most suitable fibres for cultivation in Nyasaland are Sisal hemp (*Agave rigida sisalana*), and Mauritius hemp (*Furcraea gigantea*).

Good sisal fibre is worth from £20 to £25 per ton on the English markets, whilst the price of Mauritius hemp varies from £18 to £22 10s. per ton; samples from Zomba have been valued at £28 per ton when the market price was higher.

Many thousands of plants of both kinds have lately been distributed to planters free of charge by the Agricultural and Forestry Department. Both plants are very hardy, and appear to grow equally well upon any kind of loose land throughout the country. Heavy and very moist land should be avoided, as although growth will be luxuriant the quantity and quality of fibre is lacking in comparison with that grown on lighter, drier lands. The cultivation of the plants will naturally be more remunerative in the Lower River and Lake districts than in the Highlands owing to the soils and climate being more similar to those prevailing in the natural homes of the species.

The plants should be put out in the fields when from a foot to eighteen inches high, and at a distance of about 6 feet by 8 feet, which will give roughly 900 plants per acre. Mauritius hemp is propagated solely by bulbils formed on the flowering stems, one plant sometimes producing nearly 2,000. In addition to the above method, Sisal hemp is also propagated by suckers which are thrown up in abundance by established plants. The oftener the suckers are removed the more freely are they produced. Bulbils of both kinds should be placed in nursery beds until large enough for transfer to the plantations, whilst suckers may be planted in the plantations at the time they are removed from the plants.

Throughout the Highlands the first crop of Sisal may be reaped in about four years from date of planting out in the fields, Mauritius hemp maturing a year earlier. In the Lower

Shire and Ruo districts the plants would produce a crop about a year earlier.

Assuming each plant to produce from  $1\frac{1}{2}$  lbs. to 2 lbs. of fibre annually, and with 900 plants to the acre, the gross annual yield per acre would vary from 1,350 to 1,800 lbs., which at 3d. per pound gives a gross return of from £16 17s. 0d. to £22 10s. 0d. per acre per annum. From experiments carried out by the Agricultural and Forestry Department it has been ascertained that 36 sisal leaves, each 4 feet long, yielded 2 lbs. 1 oz. of dry fibre, and the same number of Mauritius hemp leaves, averaging 7 feet in length, gave 3 lbs. 3 oz. of dry fibre.

The number of years taken by the plants to "pole" or flower, after which they die, varies according to soil and climate. In the natural state this takes place immediately a sufficiency of reserve food material has been built up in the plants' tissues, and thus it will readily be understood that the cutting of all leaves as they mature prevents the formation of food reserves, and the "poling" is consequently deferred. The plants may generally be assumed to give a crop over at least four years, hence young plants must be put out between the older ones sufficiently early to ensure a continuous supply of leaves being produced.

The method of manufacture is practically the same for both fibres. For removing the water and pulp that surrounds the fibre a "scutching" machine is necessary. Several types are available, in some of which the leaves are inserted by the butt, half scutched, withdrawn, inserted by the points, and then removed to washing tanks. In the better class of machine the leaves are inserted at one end, and the clean, washed fibre turned out at the opposite end. When dry the expenditure of 3s. to 6s. per ton for wages on a brushing process will result in the fibre being classed at several pounds per ton extra on the market, as the process removes from the fibre all extraneous matter which mars its lustre, or causes the fibres to adhere together. When brushed the fibre is made up into bundles or hanks from  $2\frac{1}{2}$  to 4 inches in diameter at the centre, and baled in any convenient press.

The better class scutching machines are said to turn out under favourable conditions from 500 to 600 lbs. of dry fibre in ten hours. Two men are required for feeding the machine, and about 3 H.P. keeps it working at full pressure. Its cost is about £85 complete. The brushing machine costs about £55 and can be worked with  $\frac{3}{4}$  H.P.

The leaves should be cut before they are over-ripe, erring if anything slightly on the side of immaturity, as the fibre so obtained will be finer, softer, more ductile and of a better colour. The fibre should be extracted from the leaves as quickly as possible after cutting, as the juices begin almost immediately to coagulate and become gummy, thus rendering it more difficult to



remove the fibres. If when cut the leaves are liable to exposure to the sun or hot winds, they should be carefully covered.

The leaves should be graded into lengths before scutching and kept separate. The mixing of lengths and qualities will reduce the value considerably, as brokers will value the whole consignment of fibre according to the worst description found among it. The butt ends of the fibre should be kept together throughout all the operations, and the fibres kept as parallel as possible all the time.

Should the fibre be scutched by a machine that does not also provide for washing it, the latter operation must be carried out as expeditiously as possible, and with no exposure to the sun in order to prevent coagulation of the juice, and staining of the fibre.

According to present experience both Sisal and Mauritius hems are immune from insect attack, and the manufacture of the fibre can be carried on at any time of the year, an important point when other crops are grown which demand attention at a definite period.

At least 500 acres should be planted to justify the erection of a factory for preparation of the fibre. When once established the greater the acreage the higher the percentage of profit. The profits obtained in German East Africa, where about two million plants are established, are understood to range from 20 to 40 per cent.

Planters are paying considerable attention to Sisal which is the most popular of the two hems under discussion.

An important Trust is importing machinery to treat the crop, and should this machinery prove a success large quantities of this product will be exported in a few years.

### Ground Nuts.

(*Arachis hypogaea*).

The plant is an annual, native of South Africa. It does not appear to require much care to cultivate. Dry sandy soil is most suitable, and watering is not needed. An average good crop will yield as much as fifty bushels per acre. In hard soils the crop proves objectionable owing to the difficulty of removing the nuts from the soil.

The yield of oil is large, often as much as 50 per cent. It is used extensively as a substitute for olive oil, both medicinally and for alimentary purposes. It has a distinct place in the manufacture of soap, and is also largely consumed for lubricating machines, as a lamp oil, and for dressing cloth.

As a food, ground nuts are superior in richness of all important constituents to all other vegetable products of a similar nature, being much richer in flesh forming constituents than lentils, and containing more fat and more phosphoric acid



than either lentils or peas. The leaves are greedily eaten by cattle, and form an excellent fodder, the hay being very nutritious and considerably increasing the yield of milk.

The exports are as follows:—

Year ended March 31st	lbs.	Valuation for export purposes. lbs.	Value. £.
1906	588,720	1d.	2,452
1907	487,663	1½d.	2,930
1908	183,789	1½d.	1,149
1909	101,319	1½d.	633

### Rubber.

Rubber for export is chiefly obtained from the indigenous *Landolphia* vines which are found on the banks of streams throughout the country. It is usually collected by natives and brought to the stores and traders for sale; occasionally Europeans engage in collecting it in districts where it is plentiful, employing natives to carry out the work of tapping the vines and drying the latex that exudes immediately the incisions are made in the bark.

The exports are as follows:—

Year ended 31st March.	lbs.	Valuation for export purposes. per lb.	Value £.
1898	21,416	1/-	1,059
1899	91,264	2/3	10,267
1900	118,720	2/3	13,356
1901	85,904	2/3	9,669
1902	14,393	2/3	1,619
1903	11,723	2/-	1,172
1904	4,372	2/-	437
1905	17,664	2/6	2,208
1906	17,280	2/6	2,160
1907	16,403	4/3	3,486
1908	15,533	4/3	3,300
1909	20,501	4/-	4,101

There is an export duty of 4d. per pound on the uncultivated product, but none on rubber obtained from cultivated trees.

Statistics show that 3,523 acres are now under rubber cultivation by Europeans; this is principally under Ceara rubber although a considerable acreage of Para is being grown successfully by the African Lakes Corporation in proximity to the Lake. In the Highlands the climate is too cold and the rainfall insufficient for Para.

PARA RUBBER (*Hevea Brasiliensis*). Early in 1906 a Wardian case was received from Ceylon by the African Lakes Corporation containing 2,000 Para seedlings. Of this consignment 266 plants survived and are doing very well, some of the trees being as much as 12 feet in height in July, 1908. In January, 1907, the same trees were only five feet high, and the

further growth is regarded as very satisfactory. None of the plants up to the present have shown any signs of disease. In January, 1907, a further consignment of six Wardian cases was received. When despatched from Ceylon these cases contained 6,000 seeds, but only some 2,500 survived the journey, and were planted out at 20 ft. by 20 ft. Of these about 1,600 are alive and doing well, the large percentage of deaths being due principally to white ants and the grub of the cockchafer. To get rid of the latter pest a mixture consisting of one pound of Paris green and three pounds of salt to 40 pounds of donkey manure was used and proved effectual, when dibbled in some little distance from the roots at time of planting. With Para the best results have been obtained on good *dambo* land, well drained; the danger of the plants being killed by the two pests mentioned is very much less on such ground than on the drier and lighter red soil. If the present rate of growth be maintained, tapping operations ought to commence by 1911, and the trees may be expected to flower in 1910. In order to ascertain whether Para trees can be raised from seeds packed in charcoal, a large consignment of these was brought out from Ceylon in 1907, but none of the seeds germinated. A further trial was made in 1908, and with better results, as out of 100,000 seeds 14,850 have germinated and show promise of doing well.

**CASTILLOA ELASTICA.** This variety has been tried but cannot be recommended as suitable for most parts of the Protectorate. The trees grow slowly, and in the Highlands they yield such small quantities of latex that it is impossible to tap profitably.

**CEARA** (*Manihot Glaziovii*). This is the best variety of rubber for cultivation throughout the greater part of Nyasaland. It grows quickly and is ready for tapping in the fourth or fifth year. A deep loam or alluvial soil is the most suitable and the best distance to plant is 15 ft. by 15 ft.

The land should be prepared and holed in September and the seed sown at stake, two seeds in each hole, at the commencement of the rains. Early sowing is to be recommended so that the roots become thoroughly established before the dry season sets in.

Ceara is very inclined to branch low in Nyasaland, and it is advisable to remove all lateral buds from young plants so as to get fully six feet of good straight trunk for tapping operations.

The actual cost of tapping and preparing Ceara is 1s. 2d. per lb., and recent reports from London state that the rubber is equal to best plantation Para.

**JEQUIE MANICOBA AND REMANOO MANICOBA.** Seeds of these two varieties have just been imported, but it is not yet known whether they will be successful.

## EXPERIMENTS IN TAPPING CEARA RUBBER.

(The African Lakes Corporation, Limited, Chitakali Estate.)

These experiments were commenced in November, 1906, and are still being continued. Of several systems tried the "full herring bone" has been adopted as the best for trees measuring between 25 ins. and 35 ins. in circumference 3 ft. from the ground. Bowman-Northway No. 2 Patent Tapping Knife was selected as the most suitable for trees of this description, both for opening the grooves and paring off the lower edge of the grooves in subsequent tappings. A much simpler knife is, however, being prepared and will shortly be tried. After stripping off the outer covering of thin bark the trees are left for a week or ten days before tapping. This allows the tissues to recover from the exposure to the atmosphere, and another thin crust will have formed over the surface. By removing the shield and leaning the knife a little to one side a vertical groove is cut, 6 or 7 ft. long, running down to within a few inches of the ground level. Great care is necessary, both in cutting the original grooves and in subsequently paring the lower edge of the grooves, not to cut through the cambium and expose the wood. The cambium, unlike the cortex, does not recover after being incised but produces a knot in the wood, and if badly incised the tree will be killed.

After making the vertical groove a small tin spout is inserted at the lower end, under which a vessel is placed to receive the latex. A right-angled triangular piece of tin, the right angle measuring 2 ft. and the sides 17 ins. by 17 ins. approximately, is used as a guide for cutting the oblique grooves which should be at an angle of  $45^{\circ}$  and 1 ft. apart, all leading into the vertical groove. On trees from 18 ins. to 20 ins. in circumference the "half-herring-bone" system is sufficient. On trees branching out near the ground or measuring over 35 ins. in circumference it is advisable to have two vertical grooves on opposite sides of the tree, and the half or full herring-bone system followed. It is advisable to leave a space of 2 or 3 ins. between the extreme ends of the oblique grooves running from opposite sides of the tree.

At first it was found that the latex dried very quickly in the grooves, and that only a small portion found its way into the receptacle at the base of the vertical groove. With the assistance of drip-tins this difficulty has been largely overcome. A few drops of liquid ammonia are added to the water in the drip tins to prevent the latex coagulating too quickly. Two smart lads are occupied in collecting the latex and arranging the drip tins for each tapper. The drip-tins are not fixed to the trees, but are held by the boy and shifted from groove to groove as the latex ceases to flow. After the latex has ceased to flow in all the grooves it is strained through a fine wire mesh and poured into the coagulating bowls. These should be of uniform size



**CEARA RUBBER TREE** (16 mos. old) in foreground ; **CASTILLOA** in rear.  
(African Lakes Corporation's Plantation, W. Nyasa.)





and fairly flat, as a thin biscuit is preferred. The latex commences to coagulate in a very short time after leaving the tree, especially if it is in small quantities, and is mixed with a considerable quantity of water, which is the case when using the drip-tins. There should be no delay therefore in pouring the latex into the coagulating bowls. By 4 p.m. on the same day on which it is tapped the latex has generally all coagulated. It is then rolled on a table, or slanting board, with a hand roller, and constantly washed in clear water. The wet biscuits are then placed on a wire frame, and left to dry in a well ventilated shed from which the sunlight is practically excluded. If the biscuits are sufficiently thin they should all be dry and ready for packing in the course of three weeks or a month.

The table of statistics will show the results obtained from one batch of trees after following the foregoing system. The trees were tapped about every other day for one month, making 12 or 13 tappings for the month, then allowed to rest a month, and tapped again the following month, and so on until the trees had undergone either a complete cortical stripping, or only half, as desired. It is estimated that one-tenth or one-twelfth of an inch is all that should be removed of the cortex in one tapping after the grooves have once been opened. If this rule is followed it will take two years to entirely strip a tree, after which time operations could probably be continued on the new bark.

After nearly two years' experiments the trees are showing no ill effects through excessive tapping except where the cambium has been inadvertently incised.

It may be added that the Ceara trees on this estate are of various ages, and had received practically no attention before these tapping experiments were commenced. Many of them had been damaged by bush fires, etc.

The weight of dry rubber is approximately one-half the weight of wet rubber.

Ceara rubber biscuits produced as above, and sent home from here, were valued at 4s. 10*d.* per lb.



## GARDENING NOTES.

The following notes apply to elevations from 2,000 ft. upwards, as it is only in such districts that operations can be carried on throughout the year.

In the plains most English vegetables can be grown during the 4 coldest months of the year with moderate success.

**SITUATION.** A piece of ground with a slight slope is best for all gardening purposes. It should face a direction in which the full force of the sun does not play upon it. Owing to the prevalence of strong, dust laden winds at certain seasons, which scorch most vegetation, protection must be provided. As most of these winds come from one direction—generally the east—land sloping in the opposite direction is fairly protected. Otherwise belts of tall, slender trees must be planted, such as eucalyptus and silver oak; and for low shelter under the taller growth, such plants as hibiscus, dwarf conifers, mangoes or bamboos.

**SOIL AND CULTIVATION.** The ideal soil is a moderately stiff loam, but heavy or light soils can be greatly improved by careful cultivation. Heavy soils require to be broken up to a greater depth, and to have liberal applications of sand, light manures, decayed leaves and ashes. Very light soils should receive dressings of heavy manures and clay, and be kept as solid as possible. In average soils deep cultivation must be insisted upon. The usual digging to about 4 ins. deep is useless: it should be worked to a depth of at least 12 ins. after each crop, bringing a portion of the lower soil to the surface, and placing surface soil at the bottom, incorporating at the same time plenty of well decayed manure. Manure should be continually collected, and not applied until at least 6 months' old. Deep cultivation renders the soil friable, and young roots can push themselves through with facility. Fresh portions of soil are exposed to atmospheric influence, and insoluble constituents are rendered soluble and available as plant food. The soil is more porous, and the passage of water through it is facilitated. Land carrying crops should have the surface soil kept at all times in as loose and fine a condition as possible, as this considerably checks the evaporation of moisture, and far less watering is required.

**SEED SOWING, ETC.** More failures in plant cultivation arise from ignorance or carelessness in the keeping and sowing of seeds than from any other cause. Seeds received in hermetically sealed tins should not be opened until required, and, when opened, those not immediately required should be left in the packets, stored in air-tight bottles, and kept in the coolest, darkest and driest spot available. In a hot, damp atmosphere seeds soon lose their vitality.

The quantity of seed sown at a time is usually such that it covers the surface of the soil. Myriads of plants spring up, and deprived of light and air, become "drawn" and soon get in a sickly, useless condition. Seed must be sown thinly at all

times, and the young plants transplanted as early as possible. The soil for seeds must be as fine and loose as possible and free from lumps and stones. Seeds are usually planted far too deep, with the result that the majority are unable to push through the soil. The correct depth is when the covering of soil is equal to the diameter of the seed. The soil should be lightly firmed with the back of a spade after sowing and kept continually moist with a minimum of watering. This is facilitated by laying dry grass on the soil, keeping a careful watch and removing it immediately the seeds begin to germinate.

Effectual shade must be provided to keep off the sun's rays. It should preferably be applied each morning, and removed when the sun is low. The germination of seeds is facilitated by soaking in tepid water from 10 to 40 hours, according to the size and hardness of the seed. To put soaked seeds into a dry, thirsty soil is to court failure. Water in which seeds are being soaked should be changed frequently to prevent fermentation. An efficient protection against the attacks of vermin is to soak the seed in petroleum for a few hours, as this does not in the least impair germination. Sprinkling flower of sulphur over the seed bed will check certain fungoid diseases peculiar to seedlings. Very fine seeds, and most flower seeds, are best raised in boxes of finely sifted soil, which must be kept moist and well shaded. Seedlings must be transplanted as soon as they can be conveniently handled.

Batches of almost all kinds of vegetable seeds should be sown at intervals of one month throughout the year in order to maintain a succession of crops, as most kinds tend to mature at one time instead of spreading over some months as in temperate climates.

**ROTATION.** As different plants appropriate different constituents from the soil a rotation of crops is essential. Deep rooted plants, such as beet, carrot, parsnip, etc., should be succeeded by shallow rooted kinds, *e.g.*, lettuce, spinach, onions, etc., and *vice versa*.

By planting ground nuts thickly from time to time and digging them under as soon as they commence flowering, the fertility and physical character of the soil will usually be much improved.

**SHADING.** Shading is always essential for young seedlings, and many temperate vegetables, being unable to withstand the blazing sunshine, should be protected from its burning influences at all times; from April to September it will not often be required in the Highlands, but in the plains it is advisable all the year. Permanent frame work should be erected about 6 feet above the ground, on which the shading can be laid; this should be removed an hour before sunset, and returned about an hour after sunrise. It should not be dense enough to exclude light.

What is necessary is to break the force of the sun's rays. Mats should be made from the common "bango" reed, leaving a space of one quarter inch between each reed.

**WATERING.** Watering is necessary during several months of the year, but can be considerably reduced by abolishing the useless native custom of growing everything in small raised beds from 6 to 12 inches high. Under this system of cultivation evaporation is extremely rapid, and the labour of watering needlessly increased. Watering is always to be considered a regrettable necessity, and everything must be done to minimise it. The raised bed system may be adopted only during the heaviest portion of the rains, in order to prevent a water-logged condition of the soil, but in the dry season everything should be planted on the level ground, or even in shallow trenches 2 or 3 inches deep, as this enables the plants to utilise to the fullest extent the moisture contained in the soil. Lines of plants should be carried across each plot. There is thus an economy of space and cultural operations are also less exhausting. All watering should be done at early morning and late evening, as it is most injurious during the heat of the day. Three thorough soakings a week are far preferable to small dribblets every day. Keeping the surface soil very fine checks evaporation and enables water to penetrate easily, as also does the covering of the soil with a mulching of dead grass.

### NOTES ON VEGETABLES.

Artichokes, Globe ...	Mature suitable heads in very cool and moist situations only.
„ Jerusalem ...	Grown from tubers similar to potatoes; will grow in any average soil; very nutritious.
Asparagus ...	Needs a cool, moist, heavily manured, well salted and deeply worked soil. Requires at least two years to become established from seed.
Beans, Broad ...	Rarely carry a crop, owing to the scarcity of insects capable of pollinating the flowers.
„ Runner ...	Successful in the coolest places only.
„ French ...	Almost invariably successful.
Beet... ..	Usually easy to grow. Appreciates salt in the soil. Plant round-rooted kinds, which mature earlier. Avoid newly manured land.
Borecole or Kale, Broccoli, and Brussels Sprouts.	Not often a success in tropical or sub-tropical climates. Plant in trenches, and mould the earth up to the lowest leaves from time to time.



Cabbage ... ..	Rarely a failure ; needs a rich soil, and protection from strong sunshine ; saline manures most beneficial. Can be propagated from cuttings.
Cardoon ... ..	An excellent but little known vegetable, easily grown in rich soil. Should be treated as Celery, but receive less watering. The blanched leaf-stalks are the edible portions.
Carrot ... ..	Only a failure in very strong sunshine and excessive rains.
Cauliflower ... ..	Nearly always successful ; needs a deeply cultivated rich soil and partial shade ; if inclined to form leaves instead of flower, transplant once or twice extra.
Celery ... ..	Seasons are too forcing in the tropics, hence crisp nutty flavoured stems are not easily obtained ; worth growing for the sake of the green stems, which give the characteristic flavour to soups, etc. Needs a specially rich soil, and perfect irrigation. <i>Celeriac</i> , a turnip rooted species is more easily grown, and is almost as enjoyable.
Chayote ( <i>Sechium edule</i> ).	An excellent easily grown and very productive tropical vegetable, allied to the cucumber. The plant is, however, a perennial, and produces pear shaped fruits varying from $\frac{1}{2}$ lb. to 3 lb. each.
Cress and Mustard ...	Best planted in shallow boxes at intervals of one week, keeping the soil moist, and the boxes in a shady place. Sow seed fairly thickly, and press down but do not cover with soil. Cover with damp paper until germinated.
Cucumbers and Melons.	Types suited to greenhouse culture in England are usually unsuitable for outdoor culture in the tropics. Seeds of more robust kinds must be obtained. The plants should preferably be planted on hillocks of rich soil, and trained on poles. The tender foliage is extremely liable to be attacked by all kinds of pests.
Dandelion ... ..	An excellent salad, especially for those suffering from liver complaints. Transplant to one foot apart when large enough, and when growing strongly invert a box or pot over each plant to exclude the light. Water freely, and an excellent crop of leaves will soon be produced

Egg Plant ...	...	A most delicious vegetable ; treat as in the case of tomatoes.
Endive ...	...	Successful in the cold season ; plant out and treat similar to dandelion.
Gourds, Pumpkins and Vegetable Marrow.		Plant on well-manured hillocks, and train on to poles or branches.
Herbs ...	...	Mint, Sage, Thyme and Basil are a moderate success in the hills only.
Kohl-Rabi ...	...	Intermediate between cabbage and turnip ; bulb which forms on the stem above ground is cooked ; flavour of cabbage. Resists drought better than turnips, but needs deeper cultivation. Should be used when bulb is about two inches in diameter.
Leeks ...	...	Succeed except on hot dry soils, require plenty of manure and to be planted in trenches and earthed up.
Lettuce ...	...	Easily grown everywhere ; if inclined to run to seed, sow thinly, and do not transplant, but allow to mature in the well shaded seed bed.
Maize ...	...	Sweet Maize and Pop Corn can be obtained during about five months by sowing small quantities in succession.
Onions ...	...	Occasionally refuse to "bulb" on hot soils ; seed of small growing varieties or shallots should be planted instead of the giant varieties. Italian or West Indian types are more satisfactory than English. A rich and deeply dug soil is required.
Parsley ...	...	Should be kept cool, moist, and shaded.
Parsnips ...	...	Grow fairly well, but require frost to bring out the best flavour.
Peas...	...	Should be grown in richly manured soil, and be planted in trenches four inches deep ; when germinated lay grass on each side of the row for a distance of two feet and do not water excessively. Sprinkle lime or wood ashes to keep off various pests, and thin plants out to three inches apart.
Potatoes ...	...	Plant at various seasons, water if dry, and lift the tubers immediately growth withers.
Radishes ...	...	Need to be grown very quickly to be tender ; rich, well watered and shaded soil is essential. Choose round rooted varieties.

Rhubarb	...	...	Rarely a success ; raise from seed, and during rainy season cover plot with a glass roof ; also dig a drain round the plot in order to keep it rather dry. Supply water, and in every way encourage growth during the cold season only.
Salsify	...	...	A delicious vegetable, known as the "vegetable oyster" ; needs a highly cultivated soil, and treatment as in the case of carrots.
Seakale	...	...	Easily grown from roots or seeds in the Highlands.
Spinach	...	...	In well watered soil can be grown throughout the year ; some shade is required. New Zealand Spinach, a very distinct plant, is more easily grown and equally good.
Tomatoes	...	...	Should preferably be planted against strong stakes, two feet apart ; remove all side shoots as formed until the stem is four feet high, when the top should be pinched out, and side shoots allowed to develop.
Turnips	...	...	Need a cool elevated situation, rich soil, and deep cultivation ; white, flat-rooted kinds are most suitable.
Watercress	...	..	Can be easily grown in any small stream or irrigation channel where the flow of water is not strong. Stems stuck in damp mud grow rapidly ; if growth is very rank fresh seed should be sown every few months.

## FLOWERS AND FRUIT TREES.

The following annual, biennial and perennial flowering plants are all most suitable for cultivation :—

Abronia, Accrolinum, Ageratum, Alonsoa, Amaranthus, Aster, Balsam, Begonia, Calandrinia, Calendula, Candytuft, Canna, Celosia, Clarkia, Collinsia, Convolvulus, Cosmos, Cornflower, Dahlia, Datura, Eschscholtzia, Gaillardia, Gilia, Godetia, Heliotrope, Hibiscus, Hollyhock, Ipomaea, Linaria, Linum, Lobelia, Lupin, Marigold, Marvel of Peru, Maurandya, Mesembryanthemum, Mignonette, Nasturtium, Oenothera, Pentstemon, Petunia, Phlox, Poppy, Portulaca, Solanum, Sunflower, Verbena, Virginian Stock, Viscaria, Zinnia.

ROSES. Roses flourish in any loamy soil, and it cannot be too rich. Pruning is necessary, and varies according to the class to which the plants belong. Tea roses, of which "Glorie de Dijon" and "Marechal Niel" are examples, should have all small shoots cut clean away, and the longer ones shortened to

one quarter their length. This may be done any time after the plants have flowered, and when they are at rest.

Hybrid perpetuals, of which "La France" and "Baroness Rothschild" are examples, need severe pruning after flowering. Only three or four buds should be left on the stronger shoots, and all that are growing thickly should be removed altogether. Sucker shoots must always be removed.

In some districts the climate prevents a period of rest, and the plants continuing in an active state of growth, with a continual succession of flowers, soon exhaust themselves. As a preventive treat as recommended below for English fruit trees.

Roses can be safely imported from England by Parcels Post from October to February. It should be insisted upon that the plants are not budded or grafted, but are growing on their own roots.

FRUIT. Many English fruits do not appear to succeed in the tropics, but apples, pears, peaches, and possibly plums, should succeed above the 3,000 feet line, if carefully attended to. One difficulty to be encountered is occasioned by the rapid succession of heat, drought and moisture, which prevents the period of rest to which the trees are naturally accustomed. This may be overcome to some extent by removing the soil and exposing the roots immediately after the rains. When the leaves have dropped return the soil with some manure, shorten all the last season's shoots by at least one-half, and many of the buds will probably produce flowers. Keep well supplied with water when new growth commences. The above fruit trees should always be grown on their own roots. Imported plants are often grafted on to crab-apples, quinces or plums, and invariably prove failures. The reason they are grafted in England is that the stocks are more adapted to the cold soils than the varieties of plants grown upon them.

Peaches need to have the shoots well thinned out to admit light and air; fruit should be borne on young wood, therefore all pruning is best done by pinching out the tips of the strongest shoots when making their growth. Mangoes, avocado pears, guavas, etc., only need to have such branches removed as spoil the symmetry of the tree, or are growing too thickly.

The soil around all fruit trees should be kept clear of weeds by cultivating a circular patch equal to the spread of the branches if possible. Apply a liberal quantity of manure, mixed with well decayed vegetable refuse, lime, wood ashes, etc., each year, and fork in before new growth commences.

Pineapples should be planted on the lightest and sandiest soils, and should be dug out after having produced a fruit. All suckers should be removed from the base of the fruit immediately

they are formed, as if allowed to remain they impair both the size and flavour of the fruit. The suckers may be planted up in small beds, and when large enough can be utilised to fill up blanks, or to make fresh plantations.

Strawberries must be kept free from runners if a succession of fine fruit is desired. A few plants may be allowed to produce runners which when rooted should be removed and planted separately to form the fruiting plot for the next season, the plants being removed after carrying one crop. Plant in red loamy soil whenever possible.

PROPAGATION. Next to propagation by seed the most usual method is by means of cuttings, and the chief points to be borne in mind are:—

1. Secure well ripened wood, as soft and tender shoots rarely give satisfaction.

2. Propagate if possible just after the rains, and before the onset of cold weather.

3. Shoots must be cut so as to leave a bud close to the base and another close to the apex of the cutting, as they rarely emit roots if cut some distance below a bud, and if there is not a bud near the apex decay is liable to set in.

4. The cut must be made with a very sharp knife, and be clean and smooth, as a jagged cut is sure to cause failure. The bark must not be lacerated at the point of cutting. The cut should make an angle of about  $45^{\circ}$  with the stem, commencing opposite to, and level with, the bud.

5. The length of the cutting necessarily varies according to the plant, but usually it need not exceed one foot. There must be at least two buds.

6. The soil in which cuttings are to be planted should be deeply dug and contain plenty of sharp sand, especially at the base of the cuttings. The cuttings should be inserted to about half their length and made firm. If bearing many leaves a large portion of them should be removed, as it will prevent the cutting losing its moisture by transpiration.

7. Plenty of shade is necessary, but water should be carefully applied, giving just enough to prevent any trace of dryness in the soil. When new growth commences the shading must be very gradually removed.

Soft wooded plants, *e.g.*, carnations, dahlias, geraniums, pansies, etc., are easily and quickly rooted, and may be propagated at any time of the year.

Many plants that are difficult to propagate from cuttings are best treated as follows:—Select a suitable branch, about one inch in diameter if possible, and remove a section of bark one



inch long. Fasten rich soil over the exposed wood, with the aid of stout canvas, using sufficient soil to provide a three-inch layer. Keep continually moist by means of water dripping from tins suspended above the branch. Roots will be formed and eventually push through the canvas, when the branch may be gradually severed a few inches below, removing at the same time a portion of the foliage of the rooted branch. Plant carefully, and shade well until established.

**SELECTION OF SEED** Efforts should be made to secure seeds locally whenever possible, as English seeds are yearly selected as being the most suitable for the English climate, soils, etc., and the same applies to seeds from other foreign sources. The majority of vegetables and flowers that produce seed in Nyasaland would amply repay careful selection for a few years. It is essential that special plants, which show desirable characters, and no others, be retained. From the produce of these seeds the inferior types are immediately destroyed, the finest only again selected, continuing the process each year, until eventually distinct and completely acclimatised types are obtained.

**SIMPLE INSECTICIDES AND FUNGICIDES.** For the destruction of chewing insects like the larvæ of Moths, Butterflies, Sawflies, the grubs of Beetles which feed exposed, and the Beetles themselves, Paris green is the best insecticide. Mix one ounce of Paris green and one ounce of lime with twenty gallons of water, keep well stirred, and apply with a fine sprayer. Do not use on fruit trees when in blossom.

For the destruction of sucking insects, mix one wineglassfull of petroleum and four ounces of common soap with one gallon of water. Boil vigorously, and thoroughly agitate the mixture, and when well amalgamated, dilute to three gallons with warm water. Apply with a fine sprayer.

Water applied at a temperature of 140° Fahr. is a most effective insecticide for Scale, Thrips, Mealy Bug and Aphis, and is not injurious to any part of the plants. The greatest difficulty is in keeping the water sufficiently hot.

For fungoid diseases, the most conspicuous of which in gardens are the Mildews, attacking roses and other plants, any of the following formulæ applied with a fine sprayer will prove effective:—

1. Sulphuric acid, one part; water, one thousand parts.
2. Potassium sulphide, one ounce; water, three gallons. Dissolve at first in a little hot water and use as soon as possible after preparation.
3. Copper carbonate, one ounce; strong ammonia, one pint; water, ten gallons. Mix the copper carbonate with sufficient water to form a paste, then add to and mix with the ammonia, finally diluting to correct strength with the water.

Table showing the number of plants to the acre at various distances:—

Feet apart.	Number of plants to the acre.	Feet apart.	Number of plants to the acre.
1 × 1	43,560	6 × 6	1,210
2 × 1	21,780	7 × 7	889
2 × 2	10,190	8 × 8	681
3 × 2	7,260	9 × 9	538
3 × 3	4,840	10 × 10	435
4 × 2	5,445	12 × 12	302
4 × 3	3,630	15 × 15	193
4 × 4	2,722	18 × 18	134
5 × 5	1,452	20 × 20	109

### Importation of Seeds and Plants.

The procedure adopted in respect to packets containing seeds or plants imported into Nyasaland is given on page 139.

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## LIVE STOCK.

Cattle are found throughout Nyasaland, and appear to thrive well in most districts. There is, comparatively speaking, only a small proportion of the country where the tsetse fly exists. Native cattle may be roughly described as of two kinds, the humped species, and those which have no doubt descended from South African cattle, which have no hump. Perhaps the best districts for cattle are the high lying plateaux west of the Lake and of the River Shire, generally known as "Angoniland." Here, at an elevation of from 4,000 to 5,000 feet above sea level, large herds are owned by the natives. On the shores of Lake Nyasa, however, and on the Shire River itself, cattle thrive well.

Cattle fetch high prices at Salisbury and Buluwayo, and their transport from Angoniland to those centres have been proved to be a simple matter, although some breeders consider that Southern Rhodesia is too far distant as cattle do not arrive there in a condition ready for sale after the long overland journey, and in addition there is the risk of tsetse fly *en route*.

Several owners of cattle have imported pedigree bulls from Great Britain with a view to grading up the local stock both as regards milk giving and beef producing qualities.

Nyasaland has been remarkably free from serious cattle epidemics. The Diseases of Animals Ordinance, No. 7 of 1903, prohibits the importation of animals from the following countries, *viz*:—Portuguese territory and Ports lying south of the River Zambesi and that portion of Portuguese territory lying west of the Nyasaland Protectorate, British South Africa Company's territory lying south of the River Zambesi, *viz*:—Southern Rhodesia, Transvaal and Orange River Colony, Bechuanaland Protectorate, and North-Western Rhodesia.

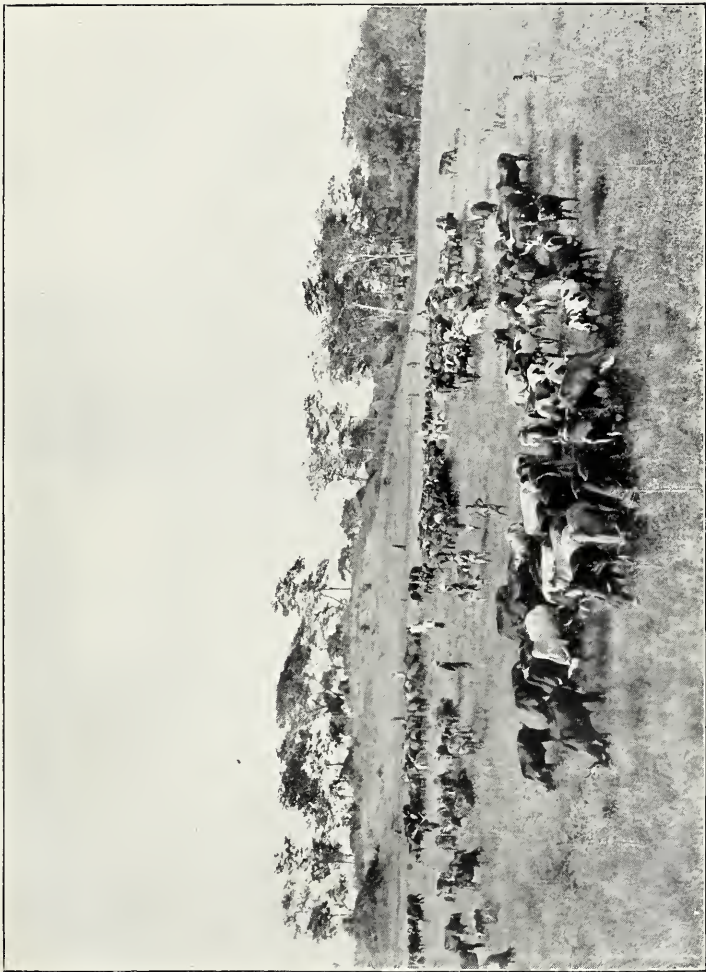
The total number of European and Native owned live stock is as follows:—

	1909.		
	European.	Native.	Total.
Cattle	10,152	44,429	54,581
Sheep	1,461	17,335	18,796
Goats	787	101,570	102,357
Pigs	225	9,718	9,943

Very little has been attempted so far with sheep breeding. The native sheep is the usual fat tailed species, and imported rams and ewes have hitherto been unfortunate. During 1906-7 a stock owner imported 12 sheep—Merino South Down and Border Leicester. Chiefly owing to the heat (the animals having been imported at the wrong time of the year) and the bad

transport on the river, all the sheep died soon after arrival except one South Down ewe. She, however, had a pure bred ram shortly afterwards which has crossed freely with the native sheep, and the half-breeds are all fertile. These half-breeds are nearly as heavy as an average European sheep, and much larger than a native sheep while the coat shows a distinct woolly tendency.

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CATTLE AT LUKULEZI.  
(Plantation of A. L. Bruce Trust.)





## ZOMBA TABLE OF SUNRISE AND SUNSET WITH PHASES OF THE MOON.

January-March, 1910.

Monday.	Sunrise.		Sunset.		Sun After Clock.	Phases of the Moon.	Time.
Jan. 3	H. 5	M. 34	H. 6	M. 26	M. 4	Jan. 3.—Last Quarter.	3.47 p.m.
10	5	35	6	25	7	11.—New Moon.	2.12 a.m.
17	5	36	6	24	9	18.—First Quarter.	0.41 a.m.
24	5	39	6	21	12	25.—Full Moon.	2.11 a.m.
31	5	40	6	20	13		
Feb. 7	5	43	6	17	14	Feb. 2.—Last Quarter.	1.48 a.m.
14	5	46	6	14	14	9.—New Moon.	3.34 p.m.
21	5	48	6	12	13	16.—First Quarter.	8.53 a.m.
28	5	51	6	9	12	23.—Full Moon.	5.36 p.m.
Mar. 7	5	56	6	4	11	Mar. 3.—Last Quarter.	10.13 p.m.
14	5	58	6	2	9	11.—New Moon.	2.33 a.m.
21	6	0	6	0	7	17.—First Quarter.	5.58 p.m.
28	6	3	5	57	5	25.—Full Moon.	10.41 a.m.

\* Sun before clock.

† Sun after clock.

# ZOMBA TABLE OF SUNRISE AND SUNSET WITH PHASES OF THE MOON.

## April-June, 1910.

Monday.	Sunrise.	Sunset.	Sun After Clock.	Phases of the Moon.	Time.
April 4	H. M.	H. M.	M. S.	April 2.—Last Quarter.	3. 3 p.m.
11	6 5	5 55	3 14	9.—New Moon.	11.46 a.m.
18	6 9	5 51	1 15	16.—First Quarter.	4.25 a.m.
25	6 12	5 48	*0 30	24.—Full Moon.	3.43 a.m.
	6 14	5 46	1 58		
May 2	6 16	5 44	3 2	May 2.—Last Quarter.	3.50 a.m.
9	6 19	5 41	3 39	8.—New Moon.	7.53 p.m.
16	6 21	5 39	3 48	15.—First Quarter.	4.34 p.m.
23	6 23	5 37	3 30	23.—Full Moon.	8. 0 p.m.
30	6 25	5 35	2 47	31.—Last Quarter.	0.45 p.m.
June 6	6 25	5 35	1 42	June 7.—New Moon.	3.37 a.m.
13	6 26	5 34	0 20	14.—First Quarter.	6.40 a.m.
20	6 27	5 33	†1 8	22.—Full Moon.	10.32 a.m.
27	6 27	5 33	2 38	29.—Last Quarter.	6.59 p.m.

\* Sun before clock.

† Sun after clock.

## ZOMBA TABLE OF SUNRISE AND SUNSET WITH PHASES OF THE MOON.

July-September, 1910.

Monday.	Sunrise.	Sunset.	Sun After Clock.	Phases of the Moon	Time.
July 4	H. M.	H. M.	H. S.	July 6.—New Moon.	11.41 a.m.
11	6 26	5 34	4 1	13.—First Quarter.	10.45 p.m.
18	6 25	5 35	5 9	21.—Full Moon.	10.58 p.m.
25	6 24	5 36	5 57	28.—Last Quarter.	11.55 p.m.
	6 22	5 38	6 17		
Aug. 1	6 20	5 40	6 10	Aug. 4.—New Moon.	8.57 p.m.
8	6 18	5 42	5 34	12.—First Quarter.	4.22 p.m.
15	6 15	5 45	4 29	20.—Full Moon.	9.35 a.m.
22	6 13	5 47	2 57	27.—Last Quarter.	4.54 a.m.
29	6 11	5 49	1 3		
Sept. 5	6 8	5 52	*1 7	Sept. 3.—New Moon.	8.26 a.m.
12	6 4	5 56	3 30	11.—First Quarter.	10.31 a.m.
19	6 2	5 58	5 58	18.—Full Moon.	7.13 p.m.
26	5 59	6 1	8 25	25.—Last Quarter.	11.14 a.m.

\* Sun before clock.

† Sun after clock.

## ZOMBA TABLE OF SUNRISE AND SUNSET WITH PHASES OF THE MOON.

October-December, 1910.

Monday.	Sunrise.	Sunset.	Sun After Clock.	Phases of the Moon.	Time.
Oct. 3	H. M.	H. M.	M. S.	Oct. 2.—New Moon	10.53 p.m.
10	5 56	6 4	10 43	11.—First Quarter.	4. 1 a.m.
17	5 54	6 6	12 45	18.—Full Moon.	4.45 a.m.
24	5 50	6 10	14 26		
31	5 47	6 13	15 38	24.—Last Quarter.	8. 8 p.m.
	5 45	6 15	16 15		
Nov. 7	5 42	6 18	16 14	Nov. 1.—New Moon.	4.17 p.m.
14	5 40	5 20	15 33	9.—First Quarter.	7.50 p.m.
21	5 38	6 22	14 11	16.—Full Moon.	2.46 p.m.
28	5 36	6 24	12 9	23.—Last Quarter.	8.34 a.m.
Dec. 5	5 35	6 25	9 31	Dec. 1.—New Moon.	11.31 a.m.
12	5 34	6 26	6 27	9.—First Quarter.	9.26 a.m.
19	5 33	6 27	3 6	16.—Full Moon.	1.26 a.m.
				23.—Last Quarter.	0.56 a.m.
26	5 33	6 27	†0 23	31.—New Moon.	6.42 a.m.

\* Sun before clock

† Sun after clock.



## WET SEASON RAINFALL FOR 1908-1909.

Stations	Approx. Height above Sea Level.	November 1908.	December 1908.	January 1909.	February 1909.	March 1909.	April 1909.	Total.
	Feet.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
Chiromo ...	125	2.95	8.39	8.43	1.58	3.11	.80	25.26
Chikwawa ...	127	3.00	6.81	5.18	1.36	2.94	.93	20.22
Neno ...	3,000	—	10.35	10.59	8.30	6.41	1.87	37.52
Mwendang'ombe	3,800	3.10	9.15	11.44	12.62	7.04	2.36	45.71
Blantyre (Govt.)	3,000	4.09	11.82	13.58	5.90	7.83	1.37	44.59
Kubula Hill	3,200	3.29	10.72	11.80	5.13	7.83	1.45	40.22
Chipande	3,000	3.68	11.35	10.78	8.15	6.61	1.45	42.02
Lukulezi ...	2,800	4.44	9.39	11.67	3.81	1.10	1.98	32.39
Zomba (Govt.)	2,948	3.16	13.51	14.84	10.48	7.68	1.70	51.39
Namadidi ...	2,600	2.35	17.47	15.21	9.11	7.94	1.19	53.27
Nachambo ...	3,000 (?)	3.15	11.83	11.64	4.63	4.72	.90	36.87
Domasi Mission	3,000	2.43	18.12	15.80	10.68	5.96	1.23	54.22
Chikala ...	2,600	3.19	16.28	—	10.13	—	—	—
Livonde ...	1,200	3.19	6.71	10.62	4.66	3.51	.75	29.44
Ncheu ...	—	4.28	12.98	10.36	6.99	8.47	.66	43.74
Dedza ...	5,044	1.54	8.81	16.72	11.79	6.52	.62	46.00
Fort Johnston	1,650	2.75	7.87	12.83	11.83	4.39	.27	39.94
Mzimba ...	—	1.70	9.04	7.05	7.46	11.48	.34	37.07
Kawia ...	2,150	2.57	14.59	9.99	19.62	14.87	16.75	78.39
Karonga ...	1,650	1.66	9.18	7.37	4.00	9.05	3.66	34.92

Note (—) denotes that no returns have been received at Zomba.

# RAINFALL FOR THE YEAR 1908.

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## METEOROLOGICAL OBSERVATIONS.

Stations.	Approx. Height above Sea Level.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
	Feet.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
Chiromo ...	125	2.46	9.06	3.10	2.43	.27	.04	1.32	Nil	Nil	.10	2.95	8.39	30.12
Chikwawa ...	127	4.80	15.09	2.25	1.67	Nil.	Nil	1.14	Nil	Nil	Nil	3.00	6.81	34.76
Neno ...	3,000	6.08	10.78	8.19	5.74	.65	Nil	2.75	Nil	Nil	1.17	4.01	10.35	49.72
Mwendang'ombe	3,800	11.76	13.91	8.94	2.85	.28	Nil	.43	Nil	Nil	.13	3.10	9.15	50.55
Blantyre (Govt.) ...	3,000	6.48	11.29	6.04	4.32	.23	Nil	1.89	Nil	.02	1.15	4.09	11.82	47.33
Kubula Hill (Blant.)	3,200	7.18	11.78	6.16	4.05	Nil	Nil	2.63	Nil	Nil	1.36	3.29	10.72	47.17
Chipande ...	3,000	4.49	14.37	4.50	3.92	Nil	Nil	.93	Nil	Nil	1.50	3.88	11.35	44.94
Fort Anderson	2,300	11.40	30.11	10.93	10.55	2.11	.10	6.04	Nil	Nil	3.44	4.50	—	79.18
Lukulezi ...	2,800	4.99	9.45	2.85	3.27	Nil	—	.19	—	—	2.42	4.44	9.39	—
Zomba (Observatory)	2,948	11.91	17.27	7.68	7.64	.44	.02	.43	Nil	.60	1.88	3.16	13.51	64.54
Namadidi ...	2,600	9.91	15.83	7.19	5.77	.15	Nil	.54	Nil	Nil	3.00	2.35	17.47	62.21
Domasi Mission	3,000	13.08	14.03	5.36	7.17	Nil	Nil	Nil	Nil	.48	Nil	2.43	18.12	60.66
Chikala ...	2,600	10.49	13.76	7.77	4.56	.22	.02	.21	Nil	.08	Nil	3.19	16.28	56.58
Liwonde ...	1,200	5.06	7.59	1.14	3.36	.14	Nil	Nil	Nil	Nil	.02	3.19	6.71	27.41
Ncheu ...	—	4.96	10.31	4.65	5.63	Nil	Nil	Nil	Nil	Nil	Nil	4.28	12.98	40.81
Fort Mlangeni	4,419	3.70	15.58	1.55	3.19	—	Nil	Nil	Nil	Nil	.97	—	3.61	28.56
Dedza ...	5,044	9.82	11.69	2.16	5.47	.21	—	—	—	—	.62	1.54	8.81	—
Fort Johnston	1,650	5.60	12.96	2.32	2.59	.19	Nil	Nil	Nil	Nil	Nil	2.75	7.87	34.28
Mzimba ...	—	10.09	8.82	.95	1.73	.05	—	—	—	—	Nil	1.70	9.04	—
Kawia ...	2,150	7.68	5.92	8.40	38.67	5.47	.02	.24	—	Nil	.54	2.57	14.59	84.83
Karonga ...	1,650	14.49	4.21	8.46	8.52	1.07	Nil	Nil	Nil	Nil	.23	1.66	9.18	47.59

Note (—) denotes that no returns have been received at Zomba.

## METEOROLOGICAL OBSERVATIONS RECORDED AT ZOMBA, 1908.

	Temperature.						Humidity.		Rainfall.		Wind.
	Absolute Shade Max.	Absolute Shade Min.	Range.	Mean. Max.	Mean. Min.	Mean. Temp.	Mean Humidity.	Vapour Tension.	Amt. Inches.	No. of Days.	
							%	Inch.			
January	86	60	26	80.2	63.9	72.0	83	.642	11.91	18	E.
February	85	61	24	79.6	66.5	73.0	84	.630	17.27	24	S.W.
March	86	60	26	80.5	63.9	72.2	83	.605	7.68	17	E.
April	85.4	59	26.4	77.7	62.6	70.1	84	.569	7.64	15	W.
May	79	52.7	26.3	73.3	57	65.1	80	.448	.44	7	S.
June ...	81	50	31	73.9	56.3	65.1	75	.439	.02	3	E.
July ...	78.3	48	30.3	72.5	52.4	62.4	77	.406	.43	7	E.
August	82	48	36	77.3	55.6	66.5	69	.416	.00	—	N.
September	87	52	35	82.7	58.9	70.8	58	.428	.60	2	N.
October	93.9	57	36.9	86.3	64.5	75.4	56	.465	1.88	4	N.
November	93	63	30	86.9	66.8	76.8	58	.509	3.16	12	N.
December	83	63	20	78.9	64.8	71.8	84	.615	13.51	26	E.
Means	—	—	—	79.2	61.1	70.1	74	.514	64.54	Total 135	—

## LAND, LABOUR, MINING.

### Sales, Leases, Tenancy Agreements, Surveys, &c.

Crown Lands are, as a rule, leased or rented in preference to being sold. Most leases have an "Option of purchase" clause permitting the lessee to buy the land outright, under fee simple, at the end of the first tenure. When this option of purchase is exercised the rent paid during the tenure, up to 50 per cent. of the upset value of the land, goes towards the purchase price.

TENANCIES are as follows:—

AGRICULTURAL LEASES.—3/21 years with option of renewal or purchase. Land leased must be surveyed. Rent.—5 per cent. on upset sale price, payable half-yearly in advance. (Minimum upset price at public sale of 5/- per acre.)

GRAZING AGREEMENTS are granted on yearly tenancy. Six months' notice on either side to terminate tenancy. Agreements provide:—No right to cut timber; no right to cultivate, build or otherwise deal with the land. Areas up to 20,000 acres will be granted. No survey required. Rent  $\frac{1}{2}$ d. to 1d. per acre.

YEARLY TENANCY AGREEMENTS. Trading store plots up to one acre in area are granted under Yearly Tenancy Agreement. Agreements provided:—No right to cut timber. Rent is £2-10-0 per plot per annum payable half-yearly in advance.

MISSION SCHOOL SITES AGREEMENT. Special facilities are given to Missions for school sites at a nominal charge.

BUILDING LEASES. Building Leases in townships and settlements. Tenure for 21 years, with option of renewal or purchase. Land leased must be surveyed.

Rents, payable half-yearly in advance, are approximately as follows:—

			£	s.	d.	
Port Herald	...	...	10	0	0	per acre, per annum.
Chiromo	...	...	15	0	0	" "
Chikwawa	...	...	5	0	0	" "
Blantyre	...	...	15	0	0	" "
Zomba	...	...	10	0	0	" "
Liwonde	...	...	2	10	0	" "
Mpimbi	...	...	2	10	0	" "
Fort Johnston	...	...	10	0	0	" "
Domira Bay	...	...	2	10	0	" "
Kota Kota	...	...	2	10	0	" "
Karonga	..	...	5	0	0	" "
Kombwe	...	...	5	0	0	" "

Land leased to be surveyed.

The survey fees now in force are:—

£2 per mile chained if labour is supplied by owner.

£3 per mile chained if labour is supplied by Government.

Plans from £1 to £5 according to area.

Deed Endorsement plans (2 copies) each 50 per cent. of cost of plan.

### Labour.

Labour is plentiful in every district from March to October. During the other months, *i.e.*, the rainy season, natives are busy in their gardens, and do not offer for work so freely unless at a higher rate than the ordinary pay of 4/- or 5/- per month; 6/- per month is generally paid during the rainy season.

Recruitment and employment of labour is governed by the Native Labour Ordinance, No. 4 of 1904, the Native Labour Ordinance, No. 7 of 1906, and the Native Labour (Amendment) Ordinance, No. 2 of 1909.

Recruitment of labour for service outside the Protectorate is forbidden.

Labour can be recruited for internal service without a permit in any district of the Protectorate. No agreement for service beyond a period of one month is enforceable unless in writing and executed before a Magistrate.

The wages of every native labourer must be paid to him in cash; no deductions are to be made except for previous part payment. An employer must provide his labourers with housing, food and medical attendance during illness.

The deaths of any native labourers are to be reported immediately to the nearest Magistrate together with death certificate, if procurable.

By the Hut Tax Regulations of 1901 a native receives a rebate of half his tax upon producing a certificate that he has worked one month during current year for a European.

### Mining.

(For details of Geology and Minerals see page 77.)

Prospecting licences giving permission to prospect for gold, silver and precious stones and mineral oil on Crown lands are issued for a sum of £1 for six months. Applications for these must be made through the Resident of the District in which prospecting is to be done.

A holder of a prospecting licence may peg off a prospecting area of 700 yards square or any rectangular four-sided area not exceeding 100 acres in extent.

In the event of a prospector making an original discovery of gold, silver or precious stones, he is entitled, under certain conditions, to 16 Reward Claims of not more than one acre each in area.

Full details will be found in Mining Ordinance, No. 2 of 1906. (Obtainable from the Government Printer, Zomba.)



# COMMUNICATIONS, TRANSPORT, &c.

## External.

Nyasaland can be reached by the following lines of steamers:—The Union-Castle Line from Southampton; the Aberdeen Line (Messrs. Rennie, Sons & Company) from London; the German East Africa Line from Southampton, Hamburg, Antwerp or Naples (Office of the Company, St. Mary Axe, London), and by any other Line calling at Durban.

Passengers book to Chinde, and the Union-Castle Mail Steamship Company, Limited, have a direct steamer from London and Southampton every 28 days. Passengers may leave England by the mail steamer a week later than this intermediate steamer to which they can tranship at Natal. The average time occupied on the voyage from England to Chinde by this route is 35 days by direct intermediate steamer or 28 days by the mail steamer with transhipment at Natal. The first class fares are as follows:—Union-Castle Line, by intermediate steamer, 36 to 44 guineas; by mail steamer with transhipment at Natal, 45 to 57 guineas, according to the position of the berth occupied.

The mail steamers of the German East Africa Line leave Naples every three weeks and reach Chinde in 23 days, thus bringing Chinde within 26 days of London. First class fares (overland to Naples), £52 to £60.

Goods in transit to British territory can be landed on the British Concession at Chinde and forwarded free of Portuguese duties.

Freight rates from Chinde to London, Hamburg, and Antwerp, by Union-Castle steamer, have not yet been finally fixed, but it is understood they will be on a very moderate basis. The following rates are probably approximately correct:—

Cotton	...	...	57/6 per 1,000 kilos. or 25/- and 10 per cent. per 40 cubic feet.
Cotton Seed	...	...	30/- per 20 cwts.
Bhangy	...	...	45/- and 10 per cent. per 40 cubic feet.
Colombo Roots	...	...	40/- per 20 cwts.
Copra	...	...	50/- ,,
Ground Nuts	...	...	45/- ,,
Grenadilla Wood	...	...	35/- ,,
Gum Copal	...	...	85/- ,,
Rubber	...	...	85/- ,,
Hides and Skins	...	...	100/- ,,
Maize	...	...	30/- ,,
Mafureira	...	...	35/- ,,
Castor Oil Seed	...	...	35/- ,,

Bark	...	...	...	37/6	per 20 cwts.
Simsim	...	...	...	45/-	„
Sunflower Seed	...	...	...	35/-	„
Wax	...	...	...	85/-	„
Curiosities and ordinary goods	...	...	...	55/-	and 10 per cent. per 40 cubic feet.

Arrangements will also be made for through rates to Liverpool, Swansea, New York and Boston.

The most important Transport Companies established at Chinde are as follows:—The African Lakes Corporation, Limited (Head Office, Anchor Line Buildings, 14, St. Vincent Place, Glasgow); The British Central Africa Company, Limited (Head Office, 20, Abchurch Lane, London); L. Deuss & Co.; and the Companhia de Zambezia.

### Internal.

From Chinde passengers (and goods) to the Protectorate proceed by stern-wheel steamer up the Zambesi River to its junction with the Shire River, then up the latter river to Port Herald or, if there is sufficient water in the river, to Chiromo and Katunga.

STEAMERS. There are 134 vessels (entered on the Shipping Register at Chiromo) plying on the Lower Shire River, of which 19 are British steamers and the remainder barges of varying capacity. There are also 2 Portuguese, and 1 German, steamers and 2 Portuguese gunboats.

River journey. The time occupied in the journey between Chinde and the Lower Shire ports is as under:—

	Dry Season.	Wet Season.
Chinde to Port Herald	5 to 6 days.	3½ to 4 days.
„ Chiromo	6 „ 7 „	4 „ 4½ „
„ Katunga	8 „ 10 „	5 „ 5¼ „

Navigation up river on the Shire ceases at Katunga, where rapids impede further progress. Above the rapids at Matope the river is again navigable for shallow draught steamers up to Lake Nyasa. On this upper portion of the river an efficient service of sternwheelers and barges is in existence, and provides transport as far as Fort Johnston at the south end of Lake Nyasa.

Since 1903 the Shire has been impassable for practically all craft during the dry months (April to December). This has hampered trade to a very considerable extent, and has emphasised the necessity for reliable communication between the Protectorate and the coast. Nyasaland could have a large export trade in produce grown by natives, especially food stuffs, if a cheap means of sending such produce to the South African markets were provided.

### Railway.

Goods and passengers are carried by railway from Port Herald to Blantyre (113 miles) crossing the River Shire at Chiromo. When the River Shire is navigable a portion of the

imports and exports is carried in barges from Chiromo to Katunga and thence by carriers or bullock wagons to Blantyre (28 miles).

The following tables give (a) the Passenger Train Service, (b) Passenger Fares, and (c) the local rates for freight charged by the Shire Highlands Railway Co.

(A).—Passenger Train Service.

Shire Highlands Railway.

UP TRAINS. WEDNESDAYS AND SATURDAYS.

Station.				Dep.	Arr.
Port Herald	...	...	...	7. 0 a.m.	—
Chiromo	...	...	...	8.35 a.m.	—
Mlanje Road	...	...	...	11.30 a.m.	—
Luchenza	...	...	...	1.25 p.m.	—
Mikolongwe	...	...	...	2.50 p.m.	—
Limbe	...	...	...	4.35 p.m.	—
Blantyre	...	...	..	—	5.0 p.m.

DOWN TRAINS. MONDAYS AND FRIDAYS.

Station.				Dep.	Arr.
Blantyre	...	...	...	7.30 a.m.	—
Limbe	...	...	...	8.10 a.m.	—
Mikolongwe	...	...	...	9.30 a.m.	—
Luchenza	...	...	...	10.37 a.m.	—
Mlanje Road	...	...	...	12.17 p.m.	—
Chiromo	...	...	...	2.50 p.m.	—
Port Herald	...	...	...	—	4.20 p.m.

Passengers' Baggage and Parcels for despatch by any given train must be delivered at the Station at least 15 minutes before the time of departure.

Good trains are worked regularly in accordance with public requirements, and information in regard to same may be had on application to the Traffic Superintendent either direct or through any Station Master.

# (B).—PASSENGER FARES (Approximate). Shire Highlands Railway.

## Fares for Passengers and Charges for Luggage.

		£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
		From Chiromo.			From Mlanje Road			From Luchenza.			From Mikolongwe.			From Limbe.		
From Port Herald	...	0	10	0	—	—	—	—	—	—	—	—	—	—	—	—
To Chiromo	...	1	1	0	0	5	8	—	—	—	—	—	—	—	—	—
" Mlanje Road	...	1	6	8	0	10	0	0	4	4	—	—	—	—	—	—
" Luchenza	...	1	11	0	0	10	0	0	9	0	0	4	8	—	—	—
" Mikolongwe	...	1	15	8	1	5	8	0	11	0	0	6	8	0	2	0
" Limbe	...	1	17	8	1	7	8	0	16	8	0	6	8	0	2	0
" Blantyre	...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
From Port Herald	...	0	5	0	—	—	—	—	—	—	—	—	—	—	—	—
To Chiromo	...	0	10	6	0	5	6	—	—	—	—	—	—	—	—	—
" Mlanje Road	...	0	13	4	0	8	4	—	—	—	—	—	—	—	—	—
" Luchenza	...	0	15	6	0	10	6	0	2	10	—	—	—	—	—	—
" Mikolongwe	...	0	17	10	0	12	10	0	4	6	0	2	4	—	—	—
" Limbe	...	0	18	10	0	13	10	0	5	6	0	3	4	0	1	0
" Blantyre	...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
From Port Herald	...	0	1	3	—	—	—	—	—	—	—	—	—	—	—	—
To Chiromo	...	0	2	8	0	1	5	—	—	—	—	—	—	—	—	—
" Mlanje Road	...	0	3	4	0	2	1	—	—	—	—	—	—	—	—	—
" Luchenza	...	0	3	11	0	2	8	0	0	9	—	—	—	—	—	—
" Mikolongwe	...	0	4	6	0	3	3	0	1	3	—	—	—	—	—	—
" Limbe	...	0	4	9	0	1	10	0	1	2	—	—	—	—	—	—
" Blantyre	...	0	4	9	0	2	1	0	1	5	0	0	7	0	0	3

Fares are the same in each direction. Return Tickets are not issued. Free Allowance of Luggage:—On each 1st Class Ticket, 2 cwts.; 2nd Class, 1 cwt.; 3rd Class, 28 lbs.

## (C).—RATES OF FREIGHT (Approximate). Shire Highlands Railway.

"A" Cargo, per ton of 2,240 lbs., or of 40 cubic feet, at option of Railway.

Produce, by weight only.

"C" Special (downwards only) viz.:—Maize, Rice, Ground Nuts, Oil Seeds (including Castor Oil Seeds) by weight only.

Stations.		Port Herald.	Chiromo.	Mlanje Road.	Luchenza.	Mikolongwe.	Limbe.	Blantyre.
PORT HERALD	"A"	...	15/0	34/3	44/2	51/9	59/11	63/5
	"B"	...	10/0	21/0	26/8	31/0	35/8	37/8
	"C"	...	5/0	10/6	13/4	15/6	17/10	18/10
CHIROMO	"A"	...	...	19/3	29/2	36/9	44/11	48/5
	"B"	...	...	11/0	16/8	21/0	25/8	27/8
	"C"	...	...	5/6	8/4	10/6	12/10	13/10
MLANJE ROAD	"A"	...	19/3	...	9/11	17/6	25/8	29/2
	"B"	...	11/0	...	5/8	10/0	14/8	16/8
	"C"	...	5/6	...	2/10	5/0	7/4	8/4
LUCHENZA	"A"	...	29/2	9/11	...	7/7	15/9	19/3
	"B"	...	16/8	5/8	...	4/4	9/0	11/0
	"C"	...	8/4	2/10	...	2/2	4/6	5/6
MIKOLONGWE	"A"	...	36/9	17/6	7/7	...	8/2	11/8
	"B"	...	21/0	10/0	4/4	...	4/8	6/8
	"C"	...	10/6	5/0	2/2	...	2/4	3/4
LIMBE	"A"	...	44/11	25/8	15/9	8/2	...	3/6
	"B"	...	25/8	14/8	9/0	4/8	...	2/0
	"C"	...	12/10	7/4	4/6	2/4	...	1/0
BLANTYRE	"A"	...	48/5	29/2	19/3	11/8	3/6	...
	"B"	...	27/8	16/8	11/0	6/8	2/0	...
	"C"	...	13/10	8/4	5/6	3/4	1/0	...



# APPROXIMATE FREIGHT AND PASSENGER RATES. Charged by Transport Companies.

From.	Chinde.	Port Herald.	Chirimo.	Limbe.	Blantyre.	Zomba.	Liwonde.	F. Johnston.	Katunga.
Chinde	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Port Herald	... 0	2 15 0	3 10 0	5 14 11	6 0 0	8 0 0	10 0 0	11 0 0	5 0 0
Chirimo	2 0 0	0 15 0	0 15 0	2 19 11	3 3 5	5 3 5	7 3 5	8 3 5	2 0 0
Limbe	4 4 11	2 19 11	2 4 11	2 4 11	3 8 5	4 8 5	6 8 5	7 8 5	1 10 0
Blantyre	4 10 0	3 3 5	2 4 11	0 3 6	0 3 6	2 3 6	4 3 6	5 3 6	2 3 6
Zomba	6 10 0	5 3 5	2 8 5	2 3 6	2 0 0	2 0 0	4 0 0	5 0 0	2 0 0
Liwonde	8 10 0	7 3 5	4 8 5	4 3 6	4 0 0	2 0 0	2 0 0	3 0 0	3 5 0
Fort Johnston	9 5 0	7 18 5	7 3 5	4 18 6	4 15 0	2 15 0	0 15 0	1 0 0	5 5 0
Katunga	3 0 0	1 10 0	1 0 0	2 3 6	2 0 0	4 0 0	6 0 0	7 0 0	6 0 0

## 1st Class Passenger Rates with Food (Through Passengers.)

Chinde	...	6 0 0	7 0 0	11 0 0	11 0 0	13 0 0	14 10 0	15 10 0	9 0 0
Port Herald	3 0 0	0 10 0	0 10 0	1 15 8	1 17 8	3 17 8	5 7 8	6 7 8	3 0 0
Chirimo	4 0 0	0 10 0	...	1 5 8	1 7 8	3 7 8	4 17 8	5 17 8	2 0 0
Limbe	8 0 0	1 15 8	1 5 8	...	0 2 0	2 2 0	3 12 0	4 12 0	2 2 0
Blantyre	8 0 0	1 17 8	1 7 8	0 2 0	...	2 0 0	3 10 0	4 10 0	2 0 0
Zomba	10 0 0	3 17 8	3 7 8	2 2 0	2 0 0	...	1 10 0	2 10 0	4 0 0
Liwonde	11 10 0	5 7 8	4 17 8	3 12 0	3 10 0	1 10 0	...	1 0 0	5 10 0
Fort Johnston	12 10 0	6 7 8	5 17 8	4 12 0	4 10 0	2 10 0	1 0 0	...	6 10 0
Katunga	6 0 0	3 0 0	2 0 0	2 2 0	2 0 0	4 0 0	5 10 0	6 10 0	...

\* Via Chirimo.

### Transport.

The usual methods of travelling within the Protectorate are as follows, *viz*:—

(a). By ricksha.

(b). By “machila,” or a slung hammock carried by from 2 to 8 natives.

All roads are fit for bicycles, and there are now about 40 motor bicycles in use.

The Government has recently imported a powerful motor lorry for the transport of Government goods between Zomba and Liwonde and His Excellency the Governor travels on the main roads on a motor car imported in 1908.

Loads are transported overland by means of native carriers, and the average load should not weigh more than 55 lbs. A large increase has taken place in the number of vehicles used for transport of goods, and heavy packages are generally carried in ox wagons, Scotch carts, &c. Planters also transport their produce to rail head by means of wagons.

Fares and freights within the Protectorate at present are approximately as given on page 228. The machila and carrier rates are as follows:—

#### Machila and Carrier Rates. Including food.

To and from.		Per man.	
		Machila.	Carrier.
		s. d.	s. d.
Chikwawa	Zomba	3 0	2 6
”	Blantyre	1 9	1 6
”	Liwonde	4 0	3 0
Blantyre	Namadzi	1 6	1 0
”	Zomba	2 0	1 9
”	Chikwawa	1 9	1 6
”	Liwonde	3 0	2 6
”	Fort Johnston	4 6	4 0
”	Fort Anderson	2 3	2 0
Zomba	Liwonde	1 6	1 3
Liwonde	Fort Johnston	2 0	1 9

### Roads.

The roads in Nyasaland may be divided into three classes:—

(a). Wagon Roads;

(b). District Main Roads;

(c). Carrier Roads.

(a). WAGON ROADS. These are suitable for dry season ox wagon traffic; they are 20 feet wide, bridged for the most part but with the exception of some 12 miles of the Zomba-Blantyre road which are macadamized, they have an earth surface only, which during the rains becomes soft and, in places, impassable for heavy loads.

They are as follows :—

Chiromo-Katunga ... ..	46 miles
Katunga-Blantyre ... ..	28 „
Blantyre-Shire (for Neno)... ..	28 „
Blantyre-Mpimbi ... ..	40 „
Blantyre-Cholo ... ..	42 „
Blantyre-Zomba ... ..	42 „
Zomba-Liwonde ... ..	32 „
Domira Bay-Bua (via Dowa) ... ..	92 „

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350 miles

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(b). DISTRICT MAIN ROADS. These main roads are suitable for hand wagons, rickshas and bicycles. The principal road commences at Liwonde—in continuation of the Zomba-Liwonde road—and goes to Karonga, *via* Ncheu, Mlangeni, Dedza, Lilongwe, Dowa, Ngara, Mzimba, Kondowe and Deep Bay. The total distance of this main road from Liwonde to Karonga is 482 miles as follows :—

Liwonde-Ncheu ... ..	46 miles
Ncheu-Mlangeni ... ..	14 „
Mlangeni-Dedza ... ..	26 „
Dedza-Lilongwe ... ..	50 „
Lilongwe-Dowa ... ..	24 „
Dowa-Ngara ... ..	40 „
Ngara-Mzimba ... ..	103 „
Mzimba-Hora ... ..	18 „
Hora-Jakwa ... ..	58 „
Jakwa-Livingstonia (Kondowe) ... ..	37 „
Livingstonia-Florence Bay ... ..	8 „
Florence Bay-Deep Bay ... ..	16 „
Deep Bay-Karonga ... ..	42 „

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482 miles

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Over and above this main road of 482 miles there are the following District Main Roads :—

Shire-Neno ... ..	14 miles
Blantyre-Mlanje ... ..	44 „
Zomba-Mlanje ... ..	60 „
Zomba-Chikala ... ..	24 „
Liwonde-Fort Johnston ... ..	45 „
Ngara-Kota Kota ... ..	58 „
Bua-Fort Manning ... ..	26 „
Mzimba-Chinteché ... ..	55 „

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326 miles

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To which has to be added the Stevenson Road which runs from Lake Nyasa to Lake Tanganyika, a distance of about 230 miles.

(c). CARRIER ROADS. These consist of tracks cleared periodically of grass and scrub. In the Shire Highlands there are good carrier roads in all directions and in the Lake District carrier roads have been made and are kept in good order.

The Motor Union of Nyasaland are taking steps to have the dangerous hills and crossings of the main roads suitably marked for cyclists.

### Lake Nyasa.

On Lake Nyasa there are seven steamers, of these two are Government vessels, the largest, the "Guendolen," being of 350 tons displacement. There are two trading steamers which make regular voyages round the Lake. The German Government steamer no longer carries passengers and cargo for the public. The Universities Mission have two steam vessels.

One steam launch, several dhows and one sailing schooner are also engaged in trading along the Lake shores.

TABLE OF DISTANCES. See page 234.

The time occupied in actual steaming to the principal ports is as follows (average speed 6 miles an hour):—

Fort Johnston to Monkey Bay ...	...	5 hours
„ Kota-Kota ...	...	19 „
„ Nkata Bay ...	...	31 „
„ Deep Bay ...	...	43 „
„ Karonga ...	...	50 „

## TABLE OF DISTANCES, LAKE NYASA.

Ft. Johnston	Mky. Bay.	Ft. Maguire.	Domira Bay.	Kota- Kota.	Nkata Bay.	Deep Bay.	Ka- ronga.	Kawia.	Mtengula.	Likoma.	Papaya Island.	Amelia Bay.	Langen- burg.	Mamoya.	Flor- ence Bay.	86
31			31	50	8 $\frac{1}{2}$	74	34	123	62	44	63 $\frac{1}{2}$	38 $\frac{1}{8}$	60	12	64	86
55	28			61 $\frac{1}{2}$	131	154	106	89	181	105	100	93	66	12	64	86
80	50			50	118	160	184	103	147	142	154	100	66	12	64	86
116	86															
186	155															
260	230															
300	271															
164	134															
113	84															
151	124															
212	186															
250	223															
310	282															
320	288															
244	213															
162	133															



## KING'S AFRICAN RIFLES.

The King's African Rifles is an Imperial Force maintained in the Protectorates of Uganda, British East Africa, Somaliland and Nyasaland, the 1st and 2nd Battalions being raised in Nyasaland.

It is officered entirely by Officers seconded from British Regiments for a term of years.

The Indian Contingent attached to Nyasaland is composed of Sikhs lent by the Government of India for three years, under the command of Indian Army Officers.

The native of Nyasaland makes an exceptionally good soldier, several expeditions proving him to be courageous and cool in action, an untiring marcher, cheery and good tempered under all circumstances.

He places implicit confidence in his Officers and becomes much attached to them. Extremely docile by nature he is easily disciplined and serious crime is unknown; simple in ideas he is, however, somewhat liable to be taken in by natives more cunning than himself.

He is honest and trustworthy and free from religious or other prejudices.

Keen to learn he picks up all drill very readily and takes a pride in turning out well on parade and on guard. With a naturally good eye he shoots well, and takes the greatest care of his arms and equipment.

During the training his intelligence develops rapidly and the standard of efficiency has been steadily improving, till it has been possible to entirely replace Sikh drill instructors by African N.C.Os., who pass an examination for promotion. Many of them can read and write a little, and under supervision are able to impart instruction better than natives of a different race. It is possible to reach a high level of training and produce good signallers, maxim gunners, and scouts capable of understanding what to find out and how to express the result of their observations.

The entire teaching of the native from a recruit to a trained soldier is carried out by British Officers.

The tribes from which the soldiers are recruited are:—

1. Yao.
2. Manganja.
3. Atonga.
4. Angoni.
5. Awemba.

The first levies were raised from the Atonga with whose assistance the slave-trading Yaos were suppressed; these latter provided a further field of recruiting. Together these served with great success in the local operations in British Central Africa, and in the expeditions in Ashanti, the Gambia, and Somaliland.

Under the name "Yao" many Manganja enlisted and the large percentage of these promoted to the rank of N.C.O. is a proof of their worth.

The Angoni were quieted by the trained Yaos and Atonga, and a few enlisted together with some Awemba from North Eastern Rhodesia. These all acquitted themselves well in Somaliland in 1902-04.

A complete Angoni company was tried with success by the 1st Battalion in the Nandi Expedition of 1905.

In 1905 the 2nd Battalion raised an Angoni and an Awemba company which have not yet been tested on service, but they appear in every way to be up to the standard of the Yaos and Atonga.

Though now only distantly connected with the Zulus of South Africa, the Angoni appear to retain many of the traditions of training and discipline handed down from the former race.

### Record of Service of the King's African Rifles.

**1899.** The 1st Battalion (with Sikhs) was actively employed in co-operation with the Portuguese Expeditionary Force sent against the Yao Chief, Mataka. A Detachment was furnished, on the requisition of the Government of North-Eastern Rhodesia, to assist in the punitive measures undertaken against the Chief Kazembe. These men marched 1,000 miles in two months.

A Second Battalion of the Central Africa Regiment was raised for garrison duty at Mauritius. It was afterwards temporarily transferred to the Somaliland Protectorate. This Battalion was at first administered by the War Office.

**1900.** A part of the 1st Battalion and Sikh Contingent from Nyasaland and half the 2nd Battalion from Somaliland were employed in the Ashanti Campaign under General Willcocks.

**1901.** The other half of the 2nd Battalion went to the Gambia and took part in the Expedition under Colonel H. E. J. Brake.

The designation of these Battalions now changed from "Central Africa Regiment" to the "1st and 2nd Battalions of the King's African Rifles," and both were administered by the Foreign Office, the 1st being stationed in Nyasaland and the 2nd kept as the Reserve Battalion for the East Africa Protectorate.

**1902.** Both Battalions, with the exception of a portion of the 1st, left to garrison Nyasaland, served in Somaliland in campaigns against the Mullah from 1902-04.

By their uniform good conduct and gallantry in the field they added considerably to the good reputation they had already earned.

The 2nd Battalion was present at the action of Erego on 6th October, 1902.

The greater part of the Detachment which was overwhelmed at Gumburru in April, 1903, after inflicting heavy losses on the enemy, was composed of men of the 2nd Battalion; 7 Officers of the Battalion including Colonel Plunkett being killed.

A small detachment formed part of Major Gough's force at Daratoleh on 23rd April, 1903.

Both Battalions were present at Jidballi, 10th January, 1904, when a loss of 1,000 was inflicted on the Mullah's followers.

**1904.** On the termination of the Somaliland Campaign the 1st Battalion returned to Nyasaland, the 2nd proceeded to East Africa and after three months in garrison at Nairobi followed the 1st to Nyasaland.

**1905.** A further reorganization took place in April, 1905. The two Battalions with a depôt company in Nyasaland were made interchangeable, serving alternately in Nyasaland and British East Africa for periods of 3 years, the Battalion for the time being in East Africa being considered the reserve Battalion for the Protectorate. Both Battalions now came under the Colonial Office Administration.

The 1st Battalion proceeded to East Africa and took part in the Nandi Expedition, 1905.

**1906.** Two companies of the 1st Battalion were sent from East Africa to garrison Zanzibar.

**1907.** A further reorganization took place.

**1908.** The 1st Battalion returned to Nyasaland from East Africa in July, being relieved there by the 2nd Battalion.

In December a detachment of Officers and men of the 1st Battalion proceeded to Somaliland.

A Reserve was raised at the beginning of the year, composed of men who had previously served with the King's African Rifles. These Reservists, on being called out for service, responded with great promptness, and a number of them accompanied the troops to Somaliland.

**1909.** Part of the 1st Battalion is still serving in Somaliland.

## VOLUNTEER RESERVE.

The Volunteer movement was initiated in the year 1900 with the object of providing a reserve force of trained marksmen for service in case of emergency. It was officially recognised as a Government Institution in 1901. Rules were drawn up and sent out by the Colonial Defence Committee, and duly published in the "Nyasaland Gazette." An Organizing Secretary was appointed, local rules made, and, by the beginning of 1902, the Corps was organized, and armed with Martini-Enfield (.303) rifles issued by Government.

In 1907-8 the Corps was re-armed with the new Short Barrel Magazine Rifle.

As the result of the experience gained, it was found necessary to amend the rules originally published and in November, 1908, the Legislative Council passed a Volunteer Ordinance placing the movement on a proper and liberal basis, by which Members obtain the free issue of a Government Rifle, 200 rounds of ammunition per annum for practice purposes, and can earn 30/- per head capitation grant on passing the Government efficiency shooting tests. On enlistment Members must take the oath of allegiance, and to appear for military service in the Protectorate when called upon by the Governor.

There are at present four Sections of the Reserve, *viz.*:—at Fort Johnston, Zomba, Blantyre and Chiromo. Applications for membership should be made to the Section Commander at either of these centres, who will afford further particulars.

In 1906, Sir W. H. Manning, K.C.M.G., C.B., then Inspector General of the King's African Rifles, presented a challenge cup for competition by a team of 8 members between the Volunteer Reserve Forces of East Africa, Uganda and Nyasaland. It is competed for annually on the first Monday and Tuesday in August, the ranges being 200, 500, 600, 700 and 800 yards, prone position.

In 1906 the cup was won by Nyasaland, with a score of 1,087, East Africa being second and Uganda third. In 1907 there was no competition. In 1908 the cup was won by Uganda with a score of 1,173, East Africa being second and Nyasaland third. In 1909 East Africa won with 1,161, Nyasaland second with 1,086 and Uganda third with 1,062.

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## EDUCATION.

There are no Government schools in the Protectorate, native education being in the hands of the missionary societies established in various districts.

Government makes an annual grant of £1,000 in aid of primary education, to be allocated under certain conditions to those societies desirous of participating.

There are 1,051 schools in the Protectorate, the majority of which are "village schools" (*i.e.*, schools in charge of native teachers, superintended by Europeans from the headquarters of the missions) at which 84,359 natives receive instruction, the average attendance being 59,229.

There are 64 Europeans engaged in literary education and 35 in technical.

As an instance of the advance made in primary education it may be stated that circulars in the various vernaculars dealing with questions needing the attention and support of the natives, such as cotton cultivation, locust destruction, &c., are now distributed by Residents throughout the villages in the Protectorate, and very little difficulty is experienced by the inhabitants in reading and understanding the directions given.

The following table details the work of each Society:—

	No. of schools.	Number of Scholars on Roll and in Average Attendance.				Number of Europeans engaged in Education.	
		No. on Roll.		Average No. in Attendance.		Literary.	Technical.
		Boys.	Girls.	Boys.	Girls.		
Universities Mission to Central Africa	61	2,357	1,381	1,707	846	10	11
Dutch Reformed Church Mission ...	193	11,016	9,021	6,712	5,589	10	5
Church of Scotland Mission ... ..	104	3,660	774	2,167	425	4	9
Livingstonia Mission ... ..	518	24,472	16,714	17,224	13,530	11	5
Nyasa Industrial Mission ... ..	21	1,163	614	840	350	3	—
Zambesi Industrial Mission ... ..	73	2,705	1,520	1,925	995	3	—
White Fathers ... ..	49	2,702	1,965	2,174	1,513	13	3
Baptist Industrial Mission ... ..	22	813	750	645	590	2	—
South Africa General Mission ... ..	4	92	68	46	33	2	1
Marist Fathers ... ..	3	1,200	900	950	700	—	—
Seventh Day Adventist Mission ...	3	300	172	194	110	6	—
Total ... ..	1,051	50,480	33,879	34,548	24,681	64	35

Native artisans are trained in the industrial schools attached to the headquarters of most of the Missions, where carpentering, printing, bookbinding, agriculture, horticulture, and other practical trades are taught, much to the benefit of local industries.



## MISSIONS.

From statistics which have been supplied by the Missionary Societies, it appears that there are some 1,051 schools in the country with a roll and average attendance of 84,359 and 59,229 respectively. The Missions maintain a staff of about 100 Europeans engaged in literary and technical education, and a great number of native teachers.

Valuable medical work, which almost without exception is combined with religious and secular instruction, is carried on. There are eleven native hospitals, under the charge of qualified medical men and nurses, and numerous dispensaries attached to the various missions, at which over 78,000 natives receive medical assistance.

The following are the principal Societies possessing Missions in the Protectorate:—

### The Universities Mission to Central Africa.

This, the first mission to Nyasaland, was founded in 1859, as the result of visits by Dr. Livingstone to Oxford and Cambridge. Its first establishment in Central Africa was formed near Zomba in 1860, some slaves rescued by Dr. Livingstone being put under its care. Within a year the first bishop, Mackenzie, and three of his fellow workers, died of fever. His successor, Dr. Tozer, in company with Dr. Steere, who ultimately succeeded him, moved the mission to Mount Morambala on the Lower Shire, but owing mainly to the difficulty of getting supplies the headquarters were moved to Zanzibar, with the object of reaching the interior from that starting ground. Bishop Steere visited Nyasaland by the overland route in 1876, and started a station at Masasi (now in German territory) as an advance point towards Nyasaland, the original goal of the Mission. In 1880, Rev. W. P. Johnston established himself at Mwembe in Yao-land, and two years later work was begun on Lake Nyasa. The Island of Likoma became the headquarters of the Universities Mission to Central Africa, in Nyasaland, work being done in many of the mainland villages chiefly on the east side of the Lake. In 1892 a Bishopric of Nyasaland (subsequently called the Bishopric of Likoma) was formed, and the diocese of Likoma was separated from that of Zanzibar. There have been four bishops. In addition to the head station, the diocese has "white" stations at Kota Kota, Mpondas (Fort Johnston), Malindi, Mungoche and Mtonya (in Portuguese territory), also stations at Unangu, Msamba and Lungwena in charge of Native Clergy. It has European hospitals at Likoma, Kota Kota and Malindi. A stone cathedral at Likoma has recently been opened, and there are stone churches in six other places, besides a brick church for Europeans at Fort Johnston. A memorial church to Bishop Mackenzie was built in 1906 in Chiromo near the spot where he died, on land given by the Government for that purpose. The staff consists of a bishop,

twenty clergy, a doctor and six qualified nurses, eleven laymen and seven lady teachers. There are two steamers on the Lake, one of which serves as a moving "white" station. The Mission teaches printing, carpentry, building and masonry and other industries.

### **The Livingstonia Mission of the United Free Church of Scotland.**

This mission was the proposal of the late Rev. Dr. Stewart of Lovedale, and in 1875 the first expedition came out from Scotland under the leadership of Mr. E. D. Young, R.N., with Dr. Robert Laws as medical missionary, and five artisans. They brought with them the "Ilala" as the first steamer to be placed on Lake Nyasa. The "Ilala" is still running on the Chinde River.

The first settlement of the Mission was at Cape Maclear, but the site proved unhealthy, and, except for its harbour, was otherwise unsuitable. In 1881 the European staff moved to Bandawe, which has since become the centre of a large missionary district.

In 1894 the headquarters of the mission were fixed at Livingstonia, near Mount Waller and about five miles due west of the lake shore of Nyasa, but at an altitude of nearly 3,000 feet above it. There the work of the Overtoun Institution is being developed as the centre of the higher educational work of the mission. Selected pupils from the other stations and from other missions are sent for training.

There is a junior school, a normal department for the training of teachers, a technical school, a course for evangelists, and also courses in arts, theology, elementary medicine, commercial work and telegraphy. On the industrial side, apprentices are trained in agriculture, building (including stone quarrying and hewing as well as brickwork), in carpentry and printing. A water supply has been brought by gravitation to the station from the hills behind. An electric installation has been completed, supplying power to the workshops, and light for the schools and other buildings.

Central stations, manned by Europeans, are now at Mwenzo on the Nyasa-Tanganyika plateau; at Karonga near the north end of Nyasa; Livingstonia near Florence Bay; at Bandawe; in Ngoniland at Ekwendeni and Loudon, with Njuyu and Hora under these; at Kasungu in the Marimba district; and at Serenji and Chitambo in North-Eastern Rhodesia, near where Livingstone died. At each of these stations there is a qualified medical missionary as one of the staff, and from each centre a net-work of schools is being extended over the district.

### **Church of Scotland Mission.**

The Church of Scotland Mission was founded in 1876 at Blantyre in the Shire Highlands the site having been chosen after long search by the late Henry Henderson. Other stations were afterwards founded at Domasi in 1884, at Mlanje in 1890, and at Zomba in 1903, while the mission has several native

sub-stations and many village schools scattered over the Shire Highlands and in Southern Angoniland. The staff consists of six ordained missionaries, two medical missionaries, five nurses, five teachers, five artisans, one general agent, and six lady missionaries. In the mission schools instruction in the elementary subjects is given in the vernacular, and in the higher subjects in English. At Blantyre there is the Central Institution and Training College for the training of native teachers, evangelists, medical assistants and pastors. The course of study for hospital and medical assistants has been approved and accepted by the Government. Technical training is also given in carpentry, printing, gardening, building, cattle and dairy work, tailoring, and for women and girls laundry, sewing and housework. There are well equipped hospitals for natives at Blantyre and Zomba. A large amount of linguistic work in both Chinyanja and Chiyao has been done by the members of the staff.

### **The Dutch Reformed Church Mission.**

This was originally established in 1889 as a branch of the Livingstonia Free Church Mission. It has stations at Mlanda (Liwonde district), Mphunzi, Mkhoma, Mvera, Kongwe and Malingunde (Central Angoniland). It has also stations at Magwero, Fort Jameson, Madzimoyo and Nyanji in the British South Africa Coy's territory. It has schools at Livilezi, Livingstonia, and about 140 other places. Industrial teaching is given in brick making, house building, gardening, carpentry, boot-making and mending, etc.

### **The Zambesi Industrial Mission.**

The Zambesi Industrial Mission started work in the Shire Highlands in 1892. While engaging largely in all the recognised forms of district mission work, it seeks by means of its industrial departments to make its work self-supporting, and in this it is largely successful.

The industries engaged in are principally planting—in which coffee is the main culture, the 1909 crop being fully eighty tons—milling, tinsmithing and cotton ginning and baling.

There is an extensive steam plant for these industries, with hydraulic power on the Mitsidi station.

Ntonda station is the centre of the wheat growing industry, where an effort is made to raise all the grain required for milling purposes.

The Mission has seven stations in the charge of Europeans, the staff numbering twenty-seven; there are seventy-four out-school centres, in charge of native teachers supervised by Europeans. The higher training school for teachers is located at Muluma.

Two hospitals are in operation, one in each of the two districts in which the Mission works.

Continuous employment is given to about one thousand natives on a daily average.

### **The Nyasa Baptist Industrial Mission.**

This was started in 1892, and in 1894 was taken over and re-organized by some Baptist friends in England. It has a station about three miles north-west of Blantyre, and includes schools and shops where bootmaking and mending are taught. In 1897 a station was opened at Cholo where a Training Institute has been established accommodating fifty boarders, who are being trained as teachers and evangelists, and which is now the head station of the Mission. In 1905 a station was opened at Kapopo in North-Western Rhodesia. The staff consists of eight Europeans.

### **The Seventh Day Adventist Mission.**

In the year 1902 the Seventh-day Adventist denomination purchased an estate of 2,100 acres, situated midway between Chiromo and Blantyre. It was then known as the Plainfield Mission, having been thus named while occupied by the Baptists. On acquiring the station an Englishman was sent out as superintendent, who brought with him a negro family from America. The superintendent soon withdrew, leaving the station with the coloured family. In 1903, Mr. J. H. Watson came out as superintendent. He died a few months after arrival; in May, 1907, the superintendence was again taken over by an European residing at Malamulo. The mission has an organized native church with two sub-divisions at other stations, an English and vernacular school at Malamulo and two other schools. An out-station under European teachers has been opened in the West Shire district.

The staff consists of six Europeans assisted by twenty-five native teachers.

Native cotton cultivation has been commenced at the headquarters of the Mission. A dairy also affords employment to some of the students.

### **The White Fathers.**

(Mission Catholique des Pères Blancs).

This Mission was founded in 1902 and has stations at Ntakataka, Mua, Likuni and Kachebere in Angoniland.

In March, 1907, it had about 4,000 pupils being taught the rudiments of elementary education. Besides this elementary side of the work a certain amount of technical education is given in various trades and agriculture; special attention has been given to cotton, and European methods of cultivating vegetables and fruit trees have been taught. The Mission embraces a medical department for the treatment of sick natives.

### **The Marist Fathers.**

This Mission was started in 1901, and is a branch of a Society founded in 1710 in the West of France by a missionary priest named Louis Marie de Montfort. Its object is the Evangelization of natives and the bettering of their temporal condition by literary education and industrial training. The Mission embraces a medical department for the treatment of sick natives.

The staff consists of 12 Fathers, 2 lay Brothers and 7 Sisters, and has stations at Nzama, Nguludi, Neno and Utale.



## THE BRITISH CONCESSION AT CHINDE

**SITUATION AND AREA.** The British Concession at Chinde is situated on a spit of land between the Chinde mouth of the River Zambesi and the sea. The land is low lying and, though the soil is generally of a sandy nature, there are marshes. The Concession has been extended at various times in compensation for the land lost by river erosion. It consists at the present date of 56 acres enclosed in a fence, and has a river frontage of about 500 yards.

**HISTORY.** The suitability of Chinde as a harbour for ocean-going and river steamers, and the navigability of the bar, were first brought to notice in 1889 by Mr. D. Rankin, who had been sent out by Sir Donald Currie to find a port for the Zambesi River.

Inhamissengo, the port at the Kongoni mouth of the Zambesi, was at that time almost completely washed away; and Concepçao, the only other known port, was extremely unhealthy. Thus Mr. Rankin's discovery of Chinde was of great importance. The British Government, desirous of furthering British interests in the interior, applied to the Portuguese Government for a piece of land at the mouth of the Chinde River, and this was conceded. In 1891 a plot of land on the river bank was selected by Captain Kean, R.N., of H.M.S. "Herald" and a 99 years' lease was granted in September, 1891, by the Lisbon Government to run from the 1st January, 1892, "for the purposes of the landing, storage and transhipment of goods and for such purposes as may be considered subsidiary thereto." This plot was thenceforward known as "the British Concession."

All imports and exports to and from Nyasaland and North-Eastern Rhodesia are landed in the Concession, and are transhipped thence into river and ocean going steamers respectively.

The current of the river and the flow of the ocean tides washed away large portions of the Concession foreshore, as had been the case at Inhamissengo, and in 1897 the Nyasaland (then British Central Africa) Government acquired the services of Mr. Cathcart Methven, M.I.C.E., who surveyed the harbour and drew up a report. Mr. Methven came to the conclusion that in order to prevent the erosion of the foreshore a heavy cement sea wall was required, but that, failing this, a system of fascines and stakes might be tried. This latter plan was adopted on a small scale but did not have the desired result, and the erosion still continues at the rate of about 16 yards a year.

**ADMINISTRATION.** The Concession remains under the Sovereignty of Portugal, but is exempt from all Portuguese rates, taxes and customs duties. British interests are guarded by a Protectorate Officer entitled "British Vice-Consul & Agent of the Nyasaland Protectorate." He has with him an Assistant Agent and a native staff.



**POSTAL & TELEGRAPH COMMUNICATIONS.** In addition to the Portuguese Post Office, there is a British Postal Agency in the Concession where the Nyasaland inward and outward mails are sorted and made up. This Postal Agency is a branch of the Nyasaland postal service and is carried on by one of its officers assisted by an Indian and a Native Clerk. The mails are carried by the Deutsche Ost Afrika Linie mail steamers by the east coast route, when available; at other times they go overland between Beira and Cape Town. A weekly service is maintained as far as possible.

The Postal Rates are the same as those in Nyasaland. Money orders are not issued or paid, and stamps are not sold but have to be obtained in Nyasaland.

Telegraphic communication with Europe is conducted by means of a Portuguese Line running to Quelimane and thence by the Eastern Telegraph Company's cable. An alternative route is by the Portuguese Line to Tete, thence by the African Trans-Continental Telegraph Company's Line to Cape Town, and thence by eastern or western cable. The rates between London and Chinde are as follows:—

By the former route, 2/9 per word (varying with the exchange).

By the latter route 2/11 per word.

**REVENUE.** The Concession revenue and expenditure forms part of the Nyasaland Budget. Landing charges are levied at the rate of 1/- per ton on imports (exports are free); and rents are charged on the plots into which the Concession is sub-divided. The present rate for a new lease of a quarter-acre plot is £40 per annum. There is a local road rate for the upkeep of Concession roads.

**THE OUTER CONCESSION.** There is also an Outer Concession adjoining the British Concession proper, with an area of some 113 acres. The lease runs for 99 years commencing on the 1st January, 1896. It is for purely residential purposes, and is not exempt from Portuguese taxation or customs duties.

**SHIPPING.** Chinde, the seaport for Nyasaland and North-Eastern Rhodesia, is served direct by two steamship companies, the Union-Castle Steamship Company and the Deutsche Ost Afrika Linie. The Union-Castle Line runs a direct service of fine intermediate steamers from London and Southampton to East African ports every 28 days *via* the Cape of Good Hope, calling off Chinde, and by means of the mail steamer leaving Southampton the following week a quick connection is made by transshipment at Natal with this intermediate East Coast steamer. Delagoa Bay and Beira are called at twice a month.

The fares to Chinde are as follows :—

By mail steamer, transshipping at Natal :—

1st Class, from ... ..	45 guineas
2nd Class, from ... ..	33 „
3rd Class, from ... ..	21 „

By direct intermediate steamer :—

1st Class, from ... ..	36 „
2nd Class, from ... ..	29 „
3rd Class, from ... ..	18 „

There is also an open berth rate of 15 guineas for men only by intermediate steamer.

The Deutsche Ost Afrika Linie mail steamers, both eastward and westward bound, call at Chinde every three weeks. The journey to London *via* the Suez Canal and overland from Marseilles occupies four weeks.

The fares are as follows :—

From Chinde to London *via* Marseilles.

	£	s.	d.
1st Class ... ..	52	5	0
2nd Class ... ..	30	15	0
3rd Class ... ..	20	18	0

and the same fares are charged by the western route. The D. O. A. L. freight rates depend on the nature of the cargo; they average £2 5s. 0d. per ton. Freight rates by the Union-Castle Line are given on page 226.

These steamers do not enter the harbour, and passengers are taken across the bar in a tender. Chinde cargo is transferred at Beira to or from a tender and an accompanying lighter.

The Aberdeen Line runs up as far as Beira about every 10 days, but the dates of sailing are uncertain. Passengers and cargo can be booked through, doing the journey between Chinde and Beira in D.O.A.L. vessels. The through rates are somewhat cheaper than those of the other lines.

There is a Portuguese Line (the Empreza Nacional) plying between Mozambique and Lisbon, and calling at intermediate ports; but this does not affect Great Britain. Some Chinde cargo is carried from Great Britain to Beira by the Ellerman-Harrison Line, and is brought on thence by the British Central Africa Company. Communication with the neighbouring ports of Beira and Quelimane is effected as occasion requires by the tenders of the D.O.A.L., by the tender of the Empreza Nacional, and by the two small steamers owned by the British Central Africa Company.

## SOCIETIES.

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### Associated Chamber of Agriculture and Commerce (Blantyre).

The Chamber was constituted in 1895 with the object of promoting the interests of agriculture and commerce in Nyasaland. It is governed by a President, Vice-President, Secretary and nine members of committee elected annually. Membership is open to all European residents in Nyasaland who are engaged in the development of the country. In 1907 the Nyasaland Planters' Association amalgamated, and the Society was reconstructed under its present title.

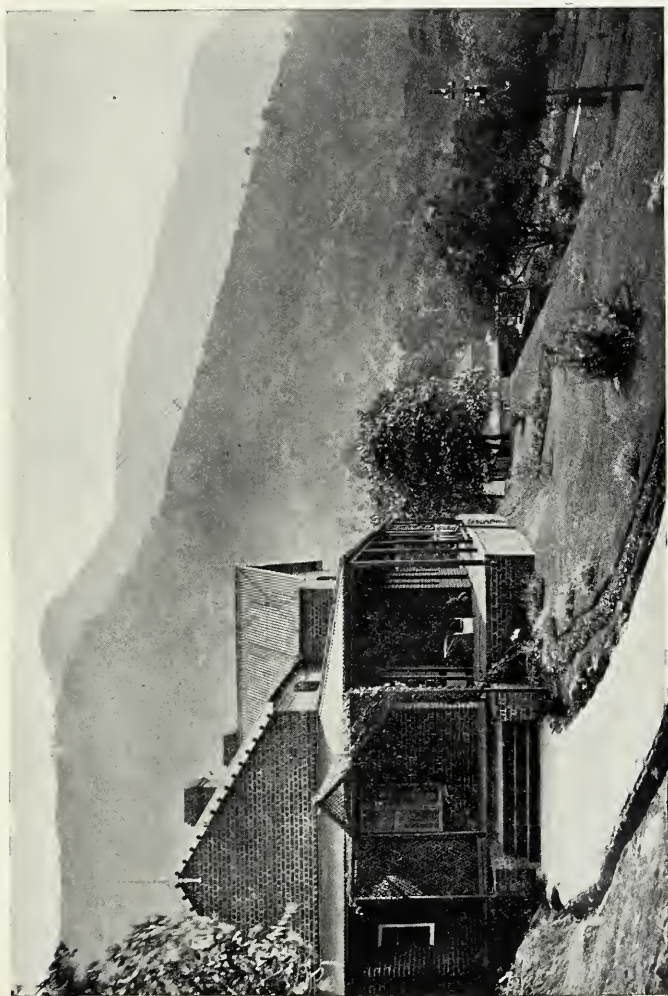
### Freemasonry.

In 1903 a Masonic Lodge was founded at Blantyre, holding its Charter from the Grand Lodge of Scotland. Its name is Lodge "Nyasa," No. 956 on the Roll of Grand Lodge. The regular meetings are held in the Masonic Hall, Blantyre, on the Friday at or nearest to the full moon in each month, at 8 p.m. The Past Masters of the Lodge are:—

Right Wor. Bro.	the Hon. Allan F. Kidney, P.M.
„ „ „	Francis E. Ryall, P.M.
„ „ „	Harry F. King, P.M.
„ „ „	George V. Alford, I.P.M.

The Office Bearers for 1909 are:—

Right Wor. Master	Wor. Bro. The Rev. James Reid.
Deputy Master	Bro. C. H. Hughes.
Substitute Master	„ T. T. Harrison.
Senior Warden	„ J. W. Skinner.
Junior Warden	„ K. Metcalfe.
Secretary	„ W. P. Morgan.
Treasurer	Wor. Bro. F. E. Ryall, P.M.
Chaplain	Bro. Rev. and Hon. Dr. Hetherwick.
Senior Deacon	„ J. M. F. Jacob.
Junior Deacon	„ E. P. Roe.
Director of Ceremonies	„ J. W. Kirk.
Organist	„ W. F. James.
Inner Guard	„ D. T. Webster.
Steward	„ J. W. Martin.
„	„ A. H. Sabbatini.
Tyler	„ A. P. Alcock.



*Photo by R. H. Salmon.*

AN OFFICIAL'S HOUSE, ZOMBA.





### Clubs, Sports, &c.

The life of a planter or settler in the Shire Highlands is now a fairly comfortable one. He can obtain most of the ordinary necessities of life and many of the luxuries from the stores in Blantyre. If within a reasonable distance of the principal European centres a certain amount of society is procurable, where also there are Sports Clubs, cricket, tennis, hockey, football, golf and other games being constantly played. The two principal clubs are: The Zomba Gymkhana Club and The Blantyre Sports Club. Sports meetings are held annually between these two clubs. The Nyasa Yacht Club have their headquarters at Fort Johnston, a regatta being held once a year, when various trophies are competed for.

### Libraries.

There are no public libraries in the Protectorate, and intending settlers should make arrangements for the supply of books, magazines, &c.

At Zomba, however, there is a good subscription library of about 3,500 volumes, and a magazine club. Applications for membership and particulars should be addressed to the Hon. Librarian, Zomba.

### Hotels.

Hotels at present exist at the following places:—Chinde, Port Herald, Chiromo, Blantyre and Fort Johnston, *viz.*: the African Lakes Hotel, Chinde; Dishington's Hotel, Chinde; Railway Hotel, Port Herald; Chiromo Club, Chiromo; Railway Hotel, Limbe; Central Hotel, Blantyre.

The general charge is 12s. 6d. per diem. In addition to these there are several "Rest Houses" where accommodation and a limited supply of provisions can be obtained.

### Currency.

The currency of Nyasaland is British Sterling. There are two banking firms in the Protectorate: The Standard Bank of South Africa (Blantyre), and the African Lakes Corporation, with its banking headquarters at Blantyre and branches at Chinde, Chiromo and Zomba.

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## WORKS OF REFERENCE.

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### 1. Official Publications.

Report on First Year's Administration of British Central Africa (C. 7504, 1894).

Annual Reports on Trade and General Condition (British Central Africa), Nyasaland Protectorate, 1895 to 1908.

Report of Operations against Slave Traders in British Central Africa (C. 7925, 1896).

Statistical Abstracts Colonial Possessions.

King's Regulations in the Nyasaland Protectorate, 1894 to 1909.

The Nyasaland Government Gazette (published monthly).

### 2. General Publications.

"British Central Africa," by Sir H. H. Johnston, 1897.

"Adventures in Nyasaland," by L. Monteith-Fotheringham, 1891.

"Explorations in the Country West of Lake Nyasa." Journal, Royal Geographical Society, August, 1897.

"Das Deutsche Afrikanische Schutzgebiet," by Carl Peters, 1895. "Deutsche Ost Africa," by F. Woltmann, 1898.

"As Colonia Portuguezas," by E. J. de C. Vasconcellos, 1897.

"British South Africa Company Report," 1896-1897.

"Africa," Vol. ii. South Africa, by A. H. Keane, 1895.

"Rise of our East African Empire." Vols. I. and II. by F. D. Lugard.

"Nyasaland under the Foreign Office," by H. L. Duff.

### 3. Languages.

SWAHILI. Handbook of the Swahili Language, by Bishop Steere, revised and enlarged by A. C. Madan. English-Swahili Dictionary, compiled for the use of the Universities Mission, British Central Africa.

CHI YAO. Yao Handbook and Grammar (Hetherwick). English Yao Vocabulary.

CHINYANJA. Dr. Hetherwick's Handbook of Chinyanja (Society for Promoting Christian Knowledge); Henry's Grammar, published by Fraser, Aberdeen. Exercise Book (Woodward), Society for Promoting Christian Knowledge. Scott's Dictionary of Mang'anja.

Portions of the Bible, New Testament, and numerous school books in Yao and Chinyanja are published by the Church of Scotland Mission to British Central Africa.

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METEOROLOGICAL MEMORANDA,  
&c.

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## METEOROLOGICAL MEMORANDA.

Taken at \_\_\_\_\_

Height of Thermometer Bulbs above the Ground.....feet.

Height of rim of Raingauge above the Ground.....inches.

N.B.—The Raingauge should be placed so that the rim is about 15 inches above the ground. The reading is taken at 9 a.m. and entered to the preceding day.

It is advisable to have maximum and minimum thermometers, so that the extremes of temperature are registered. One reading each day at 9 a.m. would then suffice.

If only ordinary thermometers are available the readings should be done at 9 a.m. and 3 p.m., but these figures will not be the real maximum and minimum temperatures.

The particulars of Instruments in use are as follows:—

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## JANUARY.

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## JULY.

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## AUGUST.

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GAME REGISTER.      Licence No.

Species.	No.	Sex.	Locality.	Date.

Species.	No.	Sex.	Locality.	Date.

**GAME REGISTER.**      Licence No.

Species.	No.	Sex.	Locality.	Date.

**MEMORANDA.**



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## NYASALAND DIRECTORY.

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Including Residents on the British Concession at Chinde who are  
connected with the Protectorate.)

1910.

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# NYASALAND DIRECTORY.

His Excellency The Governor, Sir Alfred Sharpe, K.C.M.G., C.B.  
 The Hon. The Deputy Governor, Major F. B. Pearce, C.M.G.  
 The Hon. The Assistant Deputy Governor, H. R. Wallis, Esq.

NAME.	POSTAL ADDRESS.
<b>A.</b>	
Adam, D. ...	... (Messrs. Ross, Adam & Co.), Karonga.
AFRICAN LAKES CORPORATION LTD.	{ Steamship Owners, Merchants, Planters and Bankers: Chinde, Tete, Beira, also Stations throughout Nyasaland, North- Eastern Rhodesia, and North-Western Rhodesia.
AFRICAN TRANS- CONTINENTAL TELEGRAPH Co., LTD.	{ Blantyre, Chiromo, Chikwawa, Zomba, Fort Johnston, Karonga, Deep Bay, Dowa, &c.
Aitchison, J.	... African Lakes Corporation, Chinde.
Albertyn, Miss M.	... Dutch Reformed Mission, Kongwe, Dowa.
Alcock, A. P.	... African Lakes Corporation, Blantyre.
Alexander, E. M.	... Paymaster, K. A. Rifles, Zomba.
Alexander, Rev. J. F.	Domasi Mission, Zomba.
Alexander, D.	... A. L. Corporation, Ekwendeni, Chinteché.
Alford, G. V.	... Manager of the Standard Bank of South Africa, Ltd., Blantyre.
Anderson, Miss	... Dutch Reformed Mission, Mphunzi, Dedza.
Anderson, W.	... African Lakes Corporation, Chiromo.
Anderson, J. B.	... Clerk, Public Works Dept., Zomba.
Anderson, M.A. Rev. A. M.	{ Church of Scotland Mission, The Manse, Zomba.
Andrews, F. W.	... 3rd Grade Resident, Lilongwe.
Aplin, H. D'A.	... 3rd Grade Resident, Ncheu.
Aplin, C. E. D'A.	... 3rd Grade Resident, Zomba.
Armbruster, H.	... 2nd Grade Resident, Kota Kota.
Armitage, L. F.	... Church of Scotland Mission, Fort Anderson.
Armstrong, Miss M.	U.M.C.A., Likoma, <i>via</i> Fort Johnston.
Ascroft, J.	... Chilala Estate, Chikwawa.
Auneau, Rev. Father	Utale Marist Mission, Liwonde.
Ayers, E.	... U.M.C.A., Mpondas, Fort Johnston.
<b>B.</b>	
Baird, J. B.	... Church of Scotland Mission, Blantyre.
Ballantyne, M.P.	... Overtoun Institution, Livingstonia, Deep Bay.
Bannerman, J.	... 2nd Assistant Surveyor, Public Works Department, Zomba.
Barclay, Dr. A. H.	... Government Medical Officer, Fort Johnston.
Barclay, P.	... Mwendan'gombe Estate, Nono.

NAME.	POSTAL ADDRESS.
Baretta, J. ...	Mapasi Estate, Blantyre.
Barnes, Miss S. J. ...	Government Nurse, Blantyre.
Barrett, H. T. ...	Government Secretariat, Zomba.
Barret, W. H. ...	British Central Africa Co., Chinde.
BARTLETT, A. ...	Tinsmith, Plumber, &c., Blantyre.
Bartlett, F. ...	Clerk to Govt. Railway Engineer, Blantyre.
Basle, Rev. Father A. ...	Utale Marist Mission, Liwonde.
Baxter, S. G. ...	African Lakes Corporation, Blantyre.
Bayles, H. L. ...	Customs Clerk, Chiromo.
Beaton, A. D. ...	African Lakes Corporation, Dowa.
Beaumont, G. N. ...	3rd Assistant Surveyor, Public Works Department, Zomba.
Beck, Miss J. S. ...	Church of Scotland Mission, Blantyre.
Beer, Miss P. de ...	Dutch Reformed Mission, Mkoma, Dedza.
Bertram, A. ...	Werth's Store, Blantyre.
Beulke, G. ...	Michahelles & Co., Blantyre.
Biggleston, R. A. ...	Assistant Superintendent of Buildings, Public Works Department, Zomba.
Binkhorst, The Rev. Father C. ...	Kachiwere Mission, Fort Manning.
Binnie, T. I. ...	Director of Public Works, Zomba.
Bishop, Alex. ...	Accountant, British Central Africa Co., Chinde.
Bishop of Nyasa- land, The Right Reverend, The Lord. ...	Universities Mission to Central Africa, Likoma, <i>via</i> Fort Johnston.
Bivar, Senhor R. de ...	Villa Continho, Portuguese Angoniland, <i>via</i> Dedza.
Blair, J. ...	Basale Estate, Liwonde.
Blanchot, Rev. Father J. M. ...	Marist Mission, Neno.
BLANTYRE BUILDING COMPANY. ...	Builders, Contractors, Cabinet Makers, &c., Blantyre (F. E. Ryall, Manager).
BLANTYRE AND EAST AFRICA, LIMITED ...	Land & Estate Agents, Produce Merchants, Michiru Estate, Blantyre.
BLANTYRE PRINTING & PUBLISHING Co. ...	"The Nyasaland Times" Office, Blantyre.
Boardman, L. J. ...	Fort Johnston.
Borthwick, E. K. ...	British Central Africa Co., Makungwa, Blantyre.
Boucansand, The Rev. Father J. ...	White Fathers, Ntakataka, Dedza.
Boucher, F. ...	U.M.C.A., Mpondas, Fort Johnston.
Bowes, R. S. ...	Africa Lakes Corporation, Blantyre.
Bowman F. W. ...	Domasi Mission, Zomba.
Bowman, E. D. ...	Do. do.
Boyce, E. ...	Zambesi Industrial Mission, Dombola, Ncheu.

NAME.	POSTAL ADDRESS.
Boyd, A. W.	... Imperial Tobacco Co., Limbe.
Brackenbury, A. J.	3rd Grade Resident, Fort Johnston.
Braide, W. ...	... British Central Africa Co., Chinde.
Braire, The Rev.	
Father P.	... Kachiwere Mission, Fort Manning.
Brander, Lt. G. G. S.	1st King's African Rifles, Zomba.
Bregger, W.	... Inchgordon Estate, Namadzi, Blantyre.
BRIDGER, W. D.	... Photographer, Watch and Clock Repairer, Auctioneer, &c., Blantyre.
BRITISH CENTRAL AFRICA COMPANY LIMITED.	{ Steamship Owners, Merchants, Planters, Builders & Contractors, Blantyre, Chiromo, Fort Johnston, Chinde, Zomba, Limbe, &c.
Broughton, F. S. D.	Fort Roberts Estate, Chiradzulu, Blantyre.
Brown, D. ...	... Locomotive Foreman, Shire Highlands Railway, Limbe.
Brown, J. A.	... Accountant, A. L. Corporation, Blantyre.
Brown, H. ...	... Planter, Thornwood Estate, Fort Anderson.
Brown, Dr. A.	... Livingstonia Mission, Loudon, Ngara.
Bruce, A. L.	... Magomero Estate, Namadzi, Blantyre.
Buist, H. S.	... Mbanga Estate, Neno.
Bulley, Miss M. W.	U.M.C.A., Likoma, <i>via</i> Fort Johnston.
Burdet, Rev.	
Father E.	... Superieur, White Fathers, Mua, Dedza.
Burger, Miss A.	... Dutch Reformed Mission, Mkoma, Dedza.
Burnett, A. ...	... Church of Scotland Mission, Blantyre.
Burridge, Miss E.	... U.M.C.A., Likoma, <i>via</i> Fort Johnston.
Burrows, J. W.	... British Central Africa Co., Limbe.
Byrne, R. H.	... Ndirande, Blantyre.

C.

Cadorel, The Rev.	
Father M.	... Nguludi Marist Mission, Blantyre.
Cairns, T. ...	... Zambesi Industrial Mission, Blantyre.
Caldicott, A.	... Imperial Tobacco Co., Limbe.
Cameron, K. J.	... Ntondwe Estate, Zombe.
Cameron, J.	... British Central Africa Co., Chinde.
Camille, Sister Jean	Nzama Marist Mission, Ncheu.
Cardew, C. A.	... 1st Grade Resident, Ncheu.
Carmichael, C. A.	... British Central Africa Co., Chinde.
Carmichael, H.	... African Lakes Corporation, Blantyre.
Carmichael, C. J.	... Nachambo Estate, Ntondwe, Zomba.
Caroline, Sister	... Nzama Marist Mission, Ncheu.
Carr, E. ...	... African Lakes Corporation, Chinde.
Case, Capt. H. A.	... 1st King's African Rifles, Zomba.
Casson, J. C.	... Superintendent of Native Affairs, Zomba.
Caverhill, Dr. A. M.	Church of Scotland Mission, Blantyre.
CENTRAL AFRICAN	{ (Late B. Besseling & Co.)
TRADING Co.	} Traders, Merchants, &c., Blantyre.



NAME.	POSTAL ADDRESS.
CENTRAL HOTEL,	
BLANTYRE	... Proprietor, W. F. James, Blantyre.
Chalmers, A. S.	... Overtoun Institution, Livingstonia, Deep Bay.
Champmartin, The	
Rev. Father J.	.. White Fathers Mission, Mua, Dedza.
Chapman, W.	... Agent, Kubula Stores, Chinde.
Chettle, H. S.	... Government Engineer-surveyor, Blantyre.
CHIROMO CLUB,	
CHIROMO	... Proprietor, J. C. Copland, Limbe.
Christie, J. M.	... African Lakes Corporation, Chiromo.
Christie, D.C.S.,	
Miss M.	... Church of Scotland Mission, Zomba.
CHURCH OF SCOTLAND	
MISSION	... Blantyre, Zomba, Domasi, Mlanje, &c.
Cilliers, O. J.	... Dutch Reformed Mission, Mkoma, Dedza.
Clapham, W.	... Shire Highlands Railway, Limbe.
Clark, T. C.	... Flotilla House, Blantyre.
Clarke, Rev. J. P.	... U.M.C.A., Kota-Kota.
Cleophas, Brother F.	Nguludi Marist Mission, Blantyre.
Collins, Miss C. L.	... Govt. Nursing Sister, Blantyre.
Colville, E. F.	... 3rd Grade Resident, Zomba.
Comphania do Boror, Ltd.	Planters, Importers, Exporters, and General Dealers, Chinde.
Conforzi, I.	... Njeule Estate, Chiradzulu, Blantyre.
COPLAND, J. C.	.. Proprietor, Chiromo Club, Chiromo, and Nyasaland Hotel, Limbe.
Cooper, A. E.	... African Lakes Corporation, Chinde.
Cosgrove, E. R.	... 2nd Grade Resident, Ngara.
Costley-White, E.	... 3rd Grade Resident, Fort Johnston.
Couary, T. F.	... Nyatando Estate, Port Herald.
Cox, Rev. H. A. M.	U.M.C.A., Kota-Kota.
Cox, V. J. N.	... Nyamateti Estate, Cholo.
Cox, T. H.	... Do. do.
Cox, W. H.	... Shire Highlands Railway, Limbe.
Crabb, A. H.	... U.M.C.A., Likoma, <i>via</i> Fort Johnston.
Craft, E. A.	... Treasurer, U.M.C.A., Fort Johnston.
Cremer, J. A.	... Assistant Local Auditor, Zomba.
Crosby, R. J.	... British Central Africa Co., Chinde.
Cruise, H. R.	... Clerk, Public Works Department, Zomba.
CUBITT, C. H.	... General Contractor, &c., Port Herald.
Cunningham, J. A.	African Lakes Corporation, Fort Johnston.
Currie, H.	... Church of Scotland Mission, Blantyre.
Cuthbertson, G.	... African Lakes Corporation, Chinde.

## D.

Davey, Dr. J. B.	... Govt. Medical Officer, Karonga.
Davy, E. W.	... Govt. Forester, Zomba.

NAME.	POSTAL ADDRESS.
Day, J. ...	Nyasa Industrial Mission, Cholo.
Deau, Rev. Father M.	Marist Mission, Neno.
Dell, J. A. ...	Michiru Road, Blantyre.
Dempster, J. ...	Midima Estate, Blantyre.
Denis, The Rev.	
Father P. L. ...	Kachiwere Mission, Fort Manning.
Denis, The Rev.	
Father L. ...	White Fathers, Ntakataka, Dedza.
DEUSS, L. W. J. ...	General Store Merchant, Fort Johnston (Agent to German East Africa Line).
DEUSS & Co., LUDW.	General Importers, Exporters and Forward- ing Agents, Agent to German East Africa Line, Blantyre, Chinde, Chiromo, Tete, Beira, Quelimane, Mwomboshi, and Broken Hill.
Dias, Senhor Mairo	Portuguese Angoniland, Ncheu.
Dickie, G. ...	Mapercera Estate, Chikwawa.
Dickie, J. ...	Do. do.
Dill, Miss G.	Dutch Reformed Mission, Mkoma, Dedza.
DISHINGTON, D.	Proprietor, Murray's Hotel, Chinde.
Dobson, D. D.	3rd Grade Resident, Mzimba.
Domingues, F.	Sarenje Flour Mill, Port Herald.
Don, Alex. ...	British Central Africa Co., Makandi Estate, Cholo.
Douglas, Rev. A. J.	U.M.C.A., Likoma, <i>via</i> Fort Johnston.
Doyley, P. W.	Clerk, Paymaster's Office, 1st K. A. R., Zomba.
Dreyer, Miss J.	Dutch Reformed Mission, Mvera, Dowa.
Drummond, Miss	Zambesi Industrial Mission, Chiole, Ncheu.
Duff, H. L....	2nd Grade Resident, Blantyre.
Duncan, G. C.	Supt. Engineer, B. C. A. Co., Chinde.
Duncan, J. D.	African Lakes Corpn., Bandawe, Chinteché.
DUTCH REFORMED CHURCH MISSION	Mlanda, Mphunzi, Mkoma, Kongwe, Malin- gunde, Mvera and Malombe.

## E.

Easterbrook, A. Dove	1st Grade Resident, Karonga.
Edwards, Lieut. B.	1st King's African Rifles, Fort Mangoche.
Edwards, T.	Standard Bank, Blantyre.
Edwards, Miss J.	Church of Scotland Mission, Domasi, Zomba.
Elmslie, Rev. Dr.	
W. A. ...	Overtoun Mission, Livingstonia, Deep Bay.
Ellis, A. ...	Zambesi Industrial Mission, Blantyre.
Eulalie, Sister	Nzama Marist Mission, Ncheu.

NAME.	POSTAL ADDRESS.
Evans, G. E.	... P. W. Inspector, Shire Highlands Railway, Chiromo.
Evans, F. C.	... B. C. A. Co., Chinde.
Eyre, The Ven.	
Arehdeaeon, C. B.	U. M. C. A., Mpondas, Fort Johnston.

## F.

Fage, Miss M.	... U. M. C. A., Mpondas, Fort Johnston.
Faithful, E. C.	... Lulwe Mission, Port Herald.
Farrar, N. ...	... Postmaster-General, Zomba.
Faul, Miss J.	... Dutch Reformed Mission, Mlanda, Dedza.
Ferguson, D.	... African Lakes Corporation, Blantyre.
Ferguson, J. S.	... Zambesi Industrial Mission, Maluma, Dedza.
Ferreira, Rev. J. J.	... Dutch Reformed Mission, Mphunzi, Dedza.
Ferrier, J. B.	... Lauderdale Estate, Fort Anderson.
Fiddes, G. S.	... B. C. A. Co., Mikolongwe, Limbe.
Fiddes, Jas.	... Chisombezi Estate, Fort Anderson.
Fielding, Miss A.	... U. M. C. A., Kota-Kota.
Finch, Lt. G. Wynne	1st King's African Rifles, Zomba.
Findlay, H.	... B. C. A. Co., Mpimbi, <i>via</i> Zomba.
Findlay, W.	... Zambesi Industrial Mission, Blantyre.
Firr, T. F. ...	... 1st Assist. Surveyor, Public Works Depart- ment, Zomba.
Fletcher, S. Hewitt	H. M. Vice-Consul, Chinde.
Flory, E. W.	... B. C. A. Co., Chinde.
Forbes, Ralph	... African Lakes Corporation, Blantyre.
Ford, R. E.	... Accountant, S. H. Railway, Limbe.
Fraser, Rev. D.	... Livingstonia Mission, Loudon, Ngara.
Freire, Senhor J.	... Portuguese Angoniland, Ncheu.
Frylinck, Rev. B. T.	Dutch Ref. Mission, Malingunde, Lilongwe
Fyson, P. W.	... Government Printer, Zomba.

## G.

Galloway, Mrs. A....	Zambesi Industrial Mission, Ntonda, Ncheu.
Garden, G. ...	... Eldorado Estate, Fort Anderson.
George, F. ...	... U. M. C. A., Likoma, <i>via</i> Fort Johnston.
GERMAN EAST AFRICA LINE.	Refer to Deuss & Co., Ludw., and Deuss L. W. J.
Glossop, Rev. A.	
G. B. ...	... U. M. C. A., Mpondas, Fort Johnston.
Gordon, R. W.	... 2nd Grade Resident.
Gouvria, Senhor G.	Portuguese Angoniland, Ncheu.
Grant, The Hon.	
R. W. Lyall	... Attorney General, Blantyre.
Grant, C. ...	... 1st Grade Resident, Mlanje.

NAME.	POSTAL ADDRESS.
Gray, J. ...	... Agent, African Lakes Corpn., Zomba.
Green, W. Kirby ...	... 2nd Grade Resident, Dowa.
Green, A. ...	... Agent, African Lakes Corpn., Fort Johnston.
GRENEGER, W. A.	Contractor, Chiromo.
Griffin, His Honour, Judge C. J. ...	... Judge of the High Court, Blantyre.
Guthrie, E. J. A. ...	... U. M. C. A., Mpondas, Fort Johnston.

## H.

Haarseth, M. ...	... Prospector, Lifidzi, <i>via</i> Dedza.
Haarhoff, Miss J. ...	... Dutch Reformed Mission, Mvera, Dowa.
Hall, H. L....	... Station Master, S. H. Rly., Port Herald.
Hallson, T. ...	... U. M. C. A., Mpondas, Fort Johnston.
Hamilton, Miss ...	... Church of Scotland Mission, Blantyre.
Hamilton, A. ...	... Zambesi Industrial Mission, Blantyre.
Hamilton, A. F. ...	... African Lakes Corporation, Blantyre.
Hampe-Vincent, Lieut. P. C. ...	... Commander, Indian Contingent, Zomba.
Hardie, F. W. ...	... Govt. Supervisor of Roadmaking, Zomba.
Harger, R. L. ...	... Stores Supt., S. H. Railway, Port Herald.
Harrison, T. T. ...	... African Lakes Corporation, Blantyre.
Hart, C. E. ...	... British Central Africa Co., Chinde.
Hart, T. H. ...	... Do. do.
Hastings, T. M. ...	... Mombesi Estate, Blantyre.
Haynes, F. G. ...	... Chief Engineer, Marine Transport Department, Fort Johnston.
HAYTER, E. G. (HAY- TER & WALKER)	Builders, Contractors, Cabinet Makers, General Traders, &c., Blantyre.
Hayter, F. C. ...	... Kumtaja's Estate, Blantyre.
Headrick, D. ...	... African Lakes Corporation, Blantyre.
Hearsey, Dr. H. H. Y.	Principal Medical Officer, Zomba.
Heerden, J. J. van...	Dutch Reformed Mission, Mvera, Dowa.
Henderson, Miss ...	Livingstonia Mission, Kasungu, Ngara.
Henderson, M. ...	Overtoun Institution, Livingstonia, Deep Bay.
Henderson, W. J. ...	Overtoun Institution, Livingstonia, Deep Bay.
Henry, W. ...	... Accountant, B. C. A. Co., Blantyre.
Hetherwick, D.D TheHon. & Rev.A.	Church of Scotland Mission, Blantyre.
Hewitt-Fletcher, S.	H.M. Vice-Consul and Agent, Nyasaland Protectorate, Chinde.
Hill, C. ...	... Guard, S. H. Rly., Port Herald.
Hodges, E. B. ...	... The Boarding House, Zomba.
Hoffmeister, Lieut. H. A. R. ...	... 1st King's African Rifles, Zomba.
Hoffmeyer, Rev. A. L.	Dutch Reformed Mission, Mlanda, Dedza.

NAME.	POSTAL ADDRESS.
Holmes, W. W.	... Zambesi Industrial Mission, Blantyre.
Honore, Rev. Father	Likuni Mission, Lilongwe.
Hooker, E. A.	... Namadidi Estate, Zomba.
HOOKEE, LTD., E. A.	Planters and General Dealers, Namadidi Estate, Zomba.
Howard, E. W.	... Imperial Tobacco Company, Ltd., Limbe.
HORNE & SALTER	... Contractors, Limbe.
Horne, A. W.	... (See Horne & Salter).
Howard, Dr. R.	... U. M. C. A., Likoma, <i>via</i> Fort Johnston.
Howie, J. S.	... Overtoun Institution, Livingstonia, Deep Bay.
Hughes, C. H.	... 3rd Grade Resident, Liwonde.
Hunter, J. ...	... B. & E. A., Ltd., Mlungusi Estate, Zomba.
Hutchinson, F. W.	... Lulwe Mission, Port Herald.
Hynde, R. S.	... Manager, Blantyre and East Africa, Ltd., Blantyre.
Hodgkinson, Miss C.	U. M. C. A., Likoma, <i>via</i> Fort Johnston.
Heunis, Miss	... Dutch Reformed Mission, Kongwe, Dowa.

## I.

## IMPERIAL TOBACCO

COMPANY LIMITED Limbe.

Ingall, C. E.	... Mikolongwe, Limbe.
Ingall, P. W.	... Do. do.
Inglis, J. ...	... Sochi Estate, Blantyre.
Ingram, H. I.	... Local Auditor, Zomba.
Innes, Dr. F. A.	... Livingstonia Mission, Karonga.
Irvine, Miss	... Overtoun Mission, Livingstonia, Deep Bay.

## J.

Jack, J. G. ...	... African Lakes Corporation, Chinde.
Jacob, J. M. F.	... African Lakes Corporation, Blantyre.
JAMES, W. F.	... Wine and Spirit Merchant, Central Hotel, Blantyre.
Jean-Camilla, Sister	Nzama Marist Mission, Ncheu.
Jamieson, A.	... Lunzu Estate, Blantyre.
Jardine, W.	... Planter, Panga Estate, Port Herald.
Jenkin, Rev. A. M.	... U. M. C. A., Likwenu, Liwonde.
Jenkyn, Miss M.	... Do. Kota-Kota.
Jepson, A. H.	... Postmaster, Zomba.
Jerman, R. ...	... Superintendent of Buildings, P. W. D., Zomba.
Johnson, The Ven.	
Archdeacon, W. P.	U. M. C. A., Mpondas, Fort Johnston.
Johnston, A.	... General Manager, S. H. Railway, Limbe.
Jones, G. E.	... Postmaster, Chinde.
Jordan, W. H.	... British Central Africa Co., Chinde.
Joubert, Rev. J. P. J.	Dutch Reformed Mission, Malingunde, Lilongwe.



NAME.

POSTAL ADDRESS.

K.

Kay, John ...	... African Lakes Corporation, Chinde.
Keeble, J. B.	... Assistant Secretary, Government Secretariat, Zomba.
Kempff, C. N.	... Dutch Reformed Mission, Mvera, Dowa.
Kennedy, Gerald	... African Trans-continental Telegraph Co., Zomba.
Kennedy, G. C.	... 3rd Grade Resident, Blantyre.
Ker, Rev. C. W.	... U. M. C. A., Mpondas, Fort Johnston.
Kestner, H.	... Limbe.
Keyte, Vincent John	Assistant Transport Officer, Zomba.
Kidney, The Hon.	
Allan F. ...	... Manager, African Lakes Corpn., Blantyre.
King, H. F.	... B. C. A. Coy., Chirimba Estate, Blantyre.
Kirk, J. W.	... Manager, Kubula Stores, Blantyre.
Kirkpatrick, F. J.	... Postmaster, Blantyre.
Kirkwood, P. S.	... Overtoun Institution, Livingstonia, Deep Bay.
Klindworth, H. E. ...	Agent, African Lakes Corporation, Chinde.
Knipe, C. ...	... W. N. L. Assn., Tete River, Dedza.
Knapp, A. D.	... Chikonde Estate, Neno.
Knoechl, H.	... British Central Africa Co., Blantyre.
Kock, Mathiam	
Johannes de	... Standard Bank of South Africa, Blantyre.
Konigmacher, S. M.	Matandani Estate, Neno.
KUBULA STORES,	} Wholesale Importers, Store and Produce Merchants, Blantyre, Chinde, Chiromo, Fort Johnston, Zomba, Limbe, &c.
(See also B. C. A. Co., Ltd.)	

L.

Lamond, J.	... Likulezi Estate, Fort Anderson.
Larkins, A. S.	... Kubula Stores, Blantyre.
Lawrie, Miss D.	... Dutch Reformed Mission, Mvera, Dowa.
Laws, Rev. Dr. R. ...	Overtoun Institution, Livingstonia, Deep Bay.
Lemon, M. J.	... Agent, A. L. Corporation, Kota Kota.
Letts, E. J. ...	... Postmaster, Fort Johnston.
Liddell, Miss	... Church of Scotland Mission, Fort Anderson.
Liebenberg, Rev.	
A. J. ...	... Dutch Reformed Mission, Kongwe, Dowa.
Livingstone, W. J. ...	Magomero Estate, Namadzi, Blantyre.
LIVINGSTONIA	} Livingstonia, Karonga, Bandawe, Ekwen- deni, Loudon, Kasungu, Mwenzo, &c.
MISSION OF THE	
UNITED FREE	
CHURCH OF	
SCOTLAND.	
Lloyd, E. ...	... Neno Estate, Neno.

NAME.	POSTAL ADDRESS.
Lloyd, T. H.	... Kawia Estate, Chinteché.
LONDON & BLANTYRE SUPPLY Co., LTD.	} P. C. Schmidt, Manager. } Importers of Native Trade Goods, Blantyre.
Lorimer, Miss M. B.	Church of Scotland Mission, Blantyre.
Lotter, A. P. Z.	... Dutch Reformed Mission, Mvera, Dowa.
Low, Miss ...	... Church of Scotland Mission, Blantyre.
Lowe, S. ...	... Planter, Panga Estate, Port Herald.
Lucie, Marie Sister	... Nguludi Marist Mission, Blantyre.
Lysaght, P. F.	... Shire Highlands Railway, Limbe.

## M.

MacAlpine, Rev.	
A. G. ...	... Livingstonia Mission, Chinteché.
MacDonald, Randal	Comptroller of Customs, Chiromo.
MacFarlane, Dr. R. M.	} Medical Officer, Church of Scotland Mission, } Blantyre.
MacKenzie, Rev. D. R. ...	Overtoun Institution, Livingstonia, Deep Bay.
MacKenzie, A. J. ...	A. L. Corporation, Ekwendeni, Chinteché.
MacMaster, J. ...	British Central Africa Co., Chinde.
MacMorland, J. ...	Clerk to the High Court, Blantyre.
MacNab, Miss ...	Church of Scotland Mission, Blantyre.
MacVicar, Miss M. ...	Domasi Mission, Zomba.
McAlister, J. A. ...	African Lakes Corporation, Chinde.
McCall, J. S. J. ...	Director of Agriculture, Zomba.
McCall, J. A. ...	Agent, A. L. Cpn., Matope, Blantyre.
McCash, D. ...	African Lakes Corporation, Blantyre.
McCormick, D. ...	Likulezi Estate, Fort Anderson.
McDonald, H. C. ...	1st Grade Resident, Mzimba.
McGregor, J. ...	Overtoun Institution, Livingstonia, Deep Bay.
McIlwain, J. ...	Church of Scotland Mission, Blantyre.
McKay, H. F. ...	Clerk to Supt. of Native Affairs, Zomba.
McKenzie, A. ...	African Lakes Cpn., Ekwendeni, Chinteché.
McRae, R. A. ...	3rd Grade Resident, Chiromo.
Maat, Rev. Father F. ver ...	Kachiwere Mission, Fort Manning.
Marangel, The Rev. Father J. ...	Nguludi Marist Mission, Blantyre.
Maisey, Rev. W. C.	Baptist Industrial Mission, Gowa, Ncheu
Maitland-Power, R.	Chiromo.
Malloch, P. ...	Ntondwe Estate, Zomba.
Manuel, W. G. ...	Z. I. M., Dombolo, Ncheu.
Manning, G. F. ...	2nd Grade Resident, Kota-Kota.
Mandy, W. S. ...	B. C. A. Company, Katungas, Chikwawa.
Mann, Miss N. L. ...	U. M. C. A., Malindi, Fort Johnston.

NAME.	POSTAL ADDRESS.
Manson, W. C.	... African Lakes Corporation, Blantyre.
Mantel, H. P.	... Do. do. do.
Marias, Miss R.	... Dutch Reformed Mission, Mvera, Dowa.
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